

STIC Search Report

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TO: John Pak
Location: 4a25 / 4c70
Thursday, August 26, 2004
Art Unit: 1616
Phone: 272-0620
Serial Number: 09 / 857464

From: Jan Delaval
Location: Biotech-Chem Library
Rem 1A51
Phone: 272-2504

jan.delaval@uspto.gov

Search Notes



130656

Scientific and Technical Information Center

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☐ TC2900 ☐ TC 3600 ☐ TC 3700 ☐ Law Lib ☐ Other

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Class / Subclass(es)

Earliest Priority Filing Date:

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Provide detailed information on your search topic:

- In your own words, describe in detail the concepts or subjects you want us to search.
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- ***For Chemical Structure Searches Only***
Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers
- ***For Sequence Searches Only***
Include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.
- ***For Foreign Patent Family Searches Only***
Include the country name and patent number.
- Provide examples or give us relevant citations, authors, etc., if known.
- FAX or send the **abstract, pertinent claims** (not all of the claims), **drawings, or chemical structures** to your EIC or branch library.

MAILBOX
REM 4C70

Gar Strelow

Enter your Search Topic Information below:

A compound or a mixture of materials that has the following makeup:

- a) 0.2-38 parts by weight SiO₂ and/or P₂O₅;
- b) 0.01-70 parts by weight of one or more of TiO₂, Al₂O₃, Fe₂O₃, FeO, MnO, MgO, CaO, Na₂O, K₂O, Cr₂O₃, NiO, BaO, SrO;
- c) 0.01-2 parts by weight of one or more of these elements: Nd, Y, Ce, Sm, La, Yb; and
- d) 0.02-18 parts by weight one or more these elements: C, Cr, Ni, Ba, Sr, Co, Cu, Li, Nb, Zr, Zn, Ge

Note, there is no specified total parts by weight for the composition, so the above parts are merely parts relative to each other. For example, there could be a million parts total, which makes the above quantities into small percentages of the total.

Elements in parts (c) or (d) can be in the form of compound(s).

Parts (a) + (b) are common for glass compositions. Adding one or more of (c) or (d) should narrow the search, particularly when the relative ratios are considered.

Special Instructions and Other Comments:

(For fastest service, let us know the best times to contact you, in case the searcher needs further clarification on your search.)

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Last Modified: 08/20/2004 10:04:50

=> d his

(FILE 'HOME' ENTERED AT 15:02:10 ON 26 AUG 2004)
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 15:02:22 ON 26 AUG 2004

L1 1 S WO99-KR138/AP,PRN
E KIM Y/AU
L2 1004 S E3,E19
E KIM YOUNG/AU
L3 65 S E3
E KIM YOUNG K/AU
L4 99 S E3,E7,E8
E KIM YOUNGK/AU
L5 2 S E4
L6 1 S L1 AND L2-L5
SEL RN

FILE 'REGISTRY' ENTERED AT 15:31:12 ON 26 AUG 2004

L7 32 S E1-E32
L8 2 S L7 AND (SILICA OR PHOSPHORUS PENTOXIDE)/CN
L9 12 S L7 AND (C OR CR OR BA OR SR OR CO OR CU OR LI OR NB OR ZR OR
L10 6 S L7 AND (ND OR YB OR CE OR SM OR LA OR Y)/MF
L11 12 S L7 NOT L8-L10
E FEO/MF
L12 14 S E3
L13 1 S L12 AND IRON OXIDE/CN
L14 13 S L11,L13
SEL RN L8
L15 2228 S E1-E2/CRN
SEL RN L14
L16 4580 S E3-E15/CRN
SEL RN L10
L17 179811 S E16-E21/CRN
SEL RN L9
L18 924212 S E22-E33/CRN
L19 0 S L15 AND L16 AND L17 AND L18
L20 0 S L15 AND L16 AND L17
L21 153 S L15 AND L16 AND L18
L22 71 S L16 AND L17 AND L18
L23 163 S L21,L22 AND (SI OR P)/ELS

FILE 'HCAPLUS' ENTERED AT 15:40:52 ON 26 AUG 2004

L24 37188 S (L8 OR SIO2 OR P2O5 OR SILICA OR SILICON DIOXIDE OR PHOSPHORU
L25 24613 S L24 AND (L9 OR C OR CR OR BA OR SR OR CO OR CU OR LI OR NB OR
L26 15260 S L25 AND (L14 OR TIO2 OR AL2O3 OR FE2O3 OR FEO OR MNO OR MGO O
L27 9788 S L25 AND (TITANIA OR TITANIUM DIOXIDE OR (TITANIUM OR ALUMINUM
L28 16184 S L26,L27
L29 1107 S L28 AND L8 AND L9 AND L10 AND L14
L30 1 S L1-L6 AND L29
E IR/CT
E E194+ALL
L31 5 S E7,E6+NT AND L29
E E21+ALL
L32 4 S E9-E11,E8+NT AND L29
E ELECTROMAGNETIC SHIELD/CT
E E4+ALL
L33 1 S E3,E2+NT AND L29
E WATER PURIFICATION/CT
E E3+ALL
L34 8 S E4,E3+NT AND L29
L35 18 S E8+OLD,NT AND L29
L36 0 S E9+OLD,NT AND L29

L37 32 S E10+OLD,NT AND L29
 E WATER/CT
 E E3+ALL
 E WATERS/CT
 E E3+ALL
 L38 32 S E2,E1+NT AND L29
 E OPTICAL MATERIAL/CT
 E E4+ALL
 L39 101 S E2+NT AND L29
 L40 213 S E117+OLD,NT,PFT,RT AND L29
 L41 13 S E118+OLD,NT,PFT,RT AND L29
 L42 17 S E119+OLD,NT,PFT,RT AND L29
 L43 36 S E120+OLD,NT,PFT,RT AND L29
 E ANTIFUNG/CT
 E E5+ALL
 E E2+ALL
 L44 4 S E9,E10,E8+NT AND L29
 E ANTIMICROB/CT
 E E6+ALL
 L45 5 S E4 AND L29
 L46 12 S E3+NT AND L29
 L47 3 S E3+OLD,PFT,RT AND L29
 L48 340 S L31-L47
 L49 102 S OPTICAL?/SC,SX AND L48
 L50 121 S L8 (L) DEV/RL AND L29
 L51 100 S L9 (L) DEV/RL AND L50
 L52 93 S L10 (L) DEV/RL AND L51
 L53 91 S L14 (L) DEV/RL AND L52
 L54 50 S L53 AND L48
 L55 35 S L49 AND L54
 L56 177 S L48 AND (PY<=1998 OR PRY<=1998 OR AY<=1998)
 L57 55 S L56 AND L49
 L58 13 S L56 AND WATER?/SC,SX
 L59 24 S L56 AND RADI?/SC,SX
 L60 54 S L56 AND CERAMIC?/SC,SX
 L61 9 S L56 AND (PHARMACEUT? OR PHARMACOL?)/SC,SX
 L62 119 S L57-L61
 L63 23 S L62 AND L54
 L64 4 S L29 AND FAR IR
 L65 4 S L29 AND FAR INFRARED
 L66 4 S L64,L65
 E IR RADIATION/CT
 L67 906 S E4
 L68 405 S E5
 E E3+ALL
 L69 15702 S E9-E11,E8+NT
 L70 4 S L29 AND L67-L69
 L71 6 S L66,L70
 L72 6 S L71 AND L1-L6,L24-L71
 E DEODOR/CT
 L73 7 S L29 AND (E9+OLD,NT,PFT,RT OR E18+OLD,NT,PFT,RT OR E24+OLD,NT,
 E E24+ALL
 L74 0 S L29 AND E3
 L75 10 S L29 AND E3+OLD,NT,PFT,RT
 L76 15 S L73,L75
 L77 14 S L76 NOT L72
 L78 7 S L77 AND (PY<=1998 OR PRY<=1998 OR AY<=1998)
 SEL DN AN 4 5 6
 L79 4 S L78 NOT E1-E9
 L80 10 S L72,L79 AND L1-L6,L24-L79
 L81 7 S L77 NOT L78,L80
 SEL DN AN 4 5
 L82 2 S L81 AND E10-E15

```

L83      12 S L80,L82
L84      94155 S L8 AND L14
L85      16041 S L84 AND L9,L10
L86      10309 S L85 AND (PY<=1998 OR PRY<=1998 OR AY<=1998)
L87      903 S L86 AND L8 (L) DEV/RL
L88      881 S L87 AND L14 (L) DEV/RL
L89      791 S L88 AND (L9 OR L10) (L) DEV/RL
L90      30 S L86 AND L67-L69
L91      31 S L86 AND FAR() (IR OR INFRARED)
L92      48 S L90,L91
L93      6 S L89 AND L92
L94      17 S L83,L93
L95      42 S L92 NOT L94
L96      16 S L95 AND OPTICAL?/SC,SX
L97      25 S L95 AND (WATER? OR RADI? OR PHARMACOL? OR PHARMACEU? OR CERAM
L98      35 S L96,L97
L99      7 S L95 NOT L98
L100     34 S L98,L99 AND ?RADIAT?
L101     44 S L94-L100 AND ?RADIAT?
L102     15 S L94-L100 NOT L101
          SEL DN AN 2 6 8 9 10
L103     5 S L102 AND E16-E30
L104     49 S L101,L103 AND L1-L6,L24-L103

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=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 16:36:59 ON 26 AUG 2004

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FILE COVERS 1907 - 26 Aug 2004 VOL 141 ISS 9

FILE LAST UPDATED: 25 Aug 2004 (20040825/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all hitstr tot l104

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L104 ANSWER 1 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:462833 HCAPLUS
DN 141:15860
ED Entered STN: 09 Jun 2004
TI Method for forming semiconductor device having high-k gate dielectric
material
IN Liu, Ai-Sen; Perng, Baw-Ching; Lei, Ming-Ta; Wan, Wen-Kai; Lin,
Cheng-Chung; Huang, Kuei-Wu; Lin, Yih-Shung; Lin, Chia-Hui
PA Taiwan Semiconductor Manufacturing Co., Ltd., Taiwan
SO U.S., 8 pp.
CODEN: USXXAM
DT Patent
LA English

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IC ICM H01L021-335
 ICS H01L021-8232; H01L021-44
 NCL 438142000; 438678000; 438675000
 CC 76-3 (Electric Phenomena)
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | US 6746900 | B1 | 20040608 | US 2003-369992 | 20030219 |
| PRAI | US 2003-369992 | | 20030219 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|-------|------------------------------------|
| US 6746900 | ICM | H01L021-335 |
| | ICS | H01L021-8232; H01L021-44 |
| | NCL | 438142000; 438678000; 438675000 |

AB In a method of forming an integrated circuit, a sacrificial layer is formed over a substrate. The sacrificial layer has a gate trench formed therein and a first layer of a first material formed over the substrate in the gate trench. A second layer of a second material is formed over the first layer in the gate trench. The first and second layers are processed to form a layer of a high-K dielec. material.

ST semiconductor device high k gate dielec

IT Polishing
 (chemical-mech.; formation of semiconductor device having high-k gate dielec. material)

IT Vapor deposition process
 (chemical; formation of semiconductor device having high-k gate dielec. material)

IT Dielectric constant
 Dielectric films
Electric insulators
 Electrodeposition
 Etching
 Heat treatment
IR radiation
 Integrated circuits
 MOSFET (transistors)
 SOI devices
 Semiconductor device fabrication
 (formation of semiconductor device having high-k gate dielec. material)

IT Vapor deposition process
 (phys.; formation of semiconductor device having high-k gate dielec. material)

IT 7439-91-0, Lanthanum, uses 7440-25-7, Tantalum, uses 7440-32-6, Titanium, uses 7440-58-6, Hafnium, uses 7440-65-5, Yttrium, uses 7440-67-7, Zirconium, uses 7631-86-9, Silica, uses
 RL: DEV (Device component use); USES (Uses)
 (formation of semiconductor device having high-k gate dielec. material)

IT 12033-89-5, Silicon nitride, uses
 RL: DEV (Device component use); NUU (Other use, unclassified); USES (Uses)
 (formation of semiconductor device having high-k gate dielec. material)

IT 1314-23-4, Zirconia, properties 1314-36-9, Yttria, properties 1314-61-0, Tantalum pentoxide 12055-23-1, Hafnium oxide (HfO2) 13463-67-7, Titania, properties 51429-81-3, Lanthanum oxide (La2O5)
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (formation of semiconductor device having high-k gate dielec. material)

IT 7440-21-3, Silicon, uses 7440-56-4, Germanium, uses
 RL: DEV (Device component use); USES (Uses)
 (substrate; formation of semiconductor device having high-k gate dielec. material)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Callegari; US 6573197 B2 2003 HCAPLUS
- (2) Colinge; US 6391752 B1 2002 HCAPLUS
- (3) Gardner; US 6194768 B1 2001 HCAPLUS
- (4) Gardner; US 6210999 B1 2001 HCAPLUS
- (5) Kao; US 5963818 A 1999 HCAPLUS
- (6) Lee; US 6406945 B1 2002 HCAPLUS
- (7) McTeer; US 6455424 B1 2002 HCAPLUS
- (8) Misra; US 5960270 A 1999 HCAPLUS
- (9) Yu; US 6495437 B1 2002 HCAPLUS
- (10) Zurcher; US 6344413 B1 2002 HCAPLUS

IT 7439-91-0, Lanthanum, uses 7440-65-5,
Yttrium, uses 7440-67-7, Zirconium, uses
7631-86-9, Silica, uses

RL: DEV (Device component use); USES (Uses)

(formation of semiconductor device having high-k gate dielec. material)

RN 7439-91-0 HCAPLUS

CN Lanthanum (8CI, 9CI) (CA INDEX NAME)

La

RN 7440-65-5 HCAPLUS

CN Yttrium (8CI, 9CI) (CA INDEX NAME)

Y

RN 7440-67-7 HCAPLUS

CN Zirconium (8CI, 9CI) (CA INDEX NAME)

Zr

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

IT 13463-67-7, Titania, properties

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(formation of semiconductor device having high-k gate dielec. material)

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT 7440-56-4, Germanium, uses

RL: DEV (Device component use); USES (Uses)

(substrate; formation of semiconductor device having high-k gate
dielec. material)

RN 7440-56-4 HCAPLUS

CN Germanium (7CI, 8CI, 9CI) (CA INDEX NAME)

Ge

L104 ANSWER 2 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:472461 HCAPLUS

DN 139:40429

ED Entered STN: 20 Jun 2003

TI Antimicrobial alkali silicate glass ceramic and use thereof

IN Zimmer, Jose; Fechner, Joerg Hinrich

PA Schott Glas, Germany; Carl-Zeiss-Stiftung

SO PCT Int. Appl., 56 pp.

CODEN: PIXXD2

DT Patent

LA German

IC ICM C03C010-00

ICS C03C004-00; C03C012-00

CC 57-1 (Ceramics)

Section cross-reference(s): 17, 62

FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|------------------|--|----------|------------------|----------|
| PI | WO 2003050051 | A1 | 20030619 | WO 2002-EP14044 | 20021211 |
| | W: | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | |
| | RW: | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | |
| | DE 10241495 | A1 | 20030918 | DE 2002-10241495 | 20020907 |
| PRAI | DE 2001-10161074 | A | 20011212 | | |
| | DE 2002-10241495 | A | 20020907 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--------------------------------------|
| WO 2003050051 | ICM | C03C010-00 |
| | ICS | C03C004-00; C03C012-00 |
| DE 10241495 | ECLA | C03C004/00B; C03C010/00B; C03C012/00 |

AB The invention relates to a glass ceramic, whereby the starting glass contains **SiO₂** 30-65, **Na₂O** 5-30, **CaO** 5-30, **P₂O₅** 0-1 weight% and **K₂O** 0-10, **Al₂O₃** 0-5, **MgO** 0-40, **B₂O₃** 0-50 weight%. The crystalline primary phases contain alkali-alkaline earth silicates and/or alkaline earth silicates and/or alkali silicates excepting 1Na₂O·2CaO·3SiO₂. The crystallite size of the glass ceramic ams. <10 µm, and the weight content of **SiO₂** ams. <47%.

ST calcium sodium silicate glass ceramic antimicrobial cosmetic

IT **Glass, preparation**

RL: COS (Cosmetic use); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation); USES (Uses)

(UV-absorbing; antimicrobial alkali silicate glass ceramic and use thereof)

IT **Silicate glasses**

RL: COS (Cosmetic use); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation); USES (Uses)

(alkali metal silicate; antimicrobial alkali silicate glass ceramic and use thereof)

IT Anti-inflammatory agents

Antibacterial agents**Glass ceramics**

(antimicrobial alkali silicate glass ceramic and use thereof)

IT **Cosmetics****Deodorants**

Food

Medical goods

(antimicrobial alkali silicate glass ceramic for)

IT **Plastics, preparation**

RL: BUU (Biological use, unclassified); COS (Cosmetic use); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation); USES (Uses)

(antimicrobial alkali silicate glass ceramic for)

IT **Silicate glasses**

RL: COS (Cosmetic use); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation); USES (Uses)

(calcium sodium silicate; antimicrobial alkali silicate glass ceramic and use thereof)

IT **Paper**

(hygiene; antimicrobial alkali silicate glass ceramic for)

IT **Cosmetics**

(nail lacquers; antimicrobial alkali silicate glass ceramic for)

IT **Cosmetics**

(wrinkle-preventing; antimicrobial alkali silicate glass ceramic for)

IT 1314-13-2, **Zinc oxide**, uses 1344-28-1, **Alumina**, uses 7440-22-4D, **Silver**, ions, uses 7440-45-1D, **Cerium**, ions, uses 7440-50-8D, **Copper**, ions, uses 7440-57-5D, **Gold**, ions, uses 7440-66-6D, **Zinc**, ions, uses 7553-56-2D, **Iodine**, ions, uses 20667-12-3, **Silver oxide**
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(calcium sodium silicate glass; antimicrobial alkali silicate glass ceramic and use thereof)

IT 1303-86-2, **Boron oxide**, uses 1305-78-8, **Calcia**, uses1309-48-4, **Magnesia**, uses 1313-59-3, **Sodium****oxide**, uses 1314-56-3, **Phosphorus oxide**, uses7631-86-9, **Silica**, uses 12136-45-7,**Potassium oxide**, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(calcium sodium silicate glass; antimicrobial alkali silicate glass ceramic and use thereof)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Erbe, E; US 5681872 A 1997 HCAPLUS

(2) Filho, O; US 5981412 A 1999 HCAPLUS

(3) Korea Glass Co; KR 9200150 B 1992

(4) Schott, G; WO 0103650 A 2001 HCAPLUS

(5) Schott, G; WO 0104252 A 2001 HCAPLUS

IT 1344-28-1, **Alumina**, uses 7440-45-1D, **Cerium**,ions, uses 7440-50-8D, **Copper**, ions, uses7440-66-6D, **Zinc**, ions, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(calcium sodium silicate glass; antimicrobial alkali silicate glass ceramic and use thereof)

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7440-45-1 HCAPLUS

CN Cerium (8CI, 9CI) (CA INDEX NAME)

Ce

RN 7440-50-8 HCAPLUS
CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7440-66-6 HCAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 1305-78-8, Calcia, uses 1309-48-4, Magnesia, uses
1313-59-3, Sodium oxide, uses
1314-56-3, Phosphorus oxide, uses 7631-86-9,
Silica, uses 12136-45-7, Potassium
oxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(calcium sodium silicate glass; antimicrobial alkali silicate glass
ceramic and use thereof)
RN 1305-78-8 HCAPLUS
CN Calcium oxide (CaO) (9CI) (CA INDEX NAME)

 $\text{Ca}=\text{O}$

RN 1309-48-4 HCAPLUS
CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

 $\text{Mg}=\text{O}$

RN 1313-59-3 HCAPLUS
CN Sodium oxide (Na2O) (9CI) (CA INDEX NAME)

 $\text{Na}-\text{O}-\text{Na}$

RN 1314-56-3 HCAPLUS
CN Phosphorus oxide (P2O5) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

 $\text{O}=\text{Si}=\text{O}$

RN 12136-45-7 HCAPLUS
CN Potassium oxide (K2O) (8CI, 9CI) (CA INDEX NAME)

 $\text{K}-\text{O}-\text{K}$

L104 ANSWER 3 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2003:454977 HCAPLUS
 DN 138:410632
 ED Entered STN: 13 Jun 2003
 TI Method of forming a high-k dielectric film for a field effect transistor
 IN Niwa, Masaaki
 PA Matsushita Electric Industrial Co., Ltd., Japan
 SO U.S. Pat. Appl. Publ., 14 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM H01L021-76
 NCL 438431000
 CC 76-10 (Electric Phenomena)
 Section cross-reference(s): 57
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | US 2003109114 | A1 | 20030612 | US 2002-314159 | 20021209 |
| | JP 2003179049 | A2 | 20030627 | JP 2001-377201 | 20011211 |
| PRAI | JP 2001-377201 | A | 20011211 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|------------------------------------|
| US 2003109114 | ICM | H01L021-76 |
| | NCL | 438431000 |

AB The invention relates to a method of forming a high-k dielec. film for a field effect transistor. The method involves (i) forming a metal film containing a metal on a silicon layer; and (ii) oxidizing a surface portion of the silicon layer and the metal film so as to form a silicon oxide film containing the metal in a surface portion of the silicon layer.

ST dielec film field effect transistor

IT Actinide oxides

Group IIIA element oxides

Group IIIB element oxides

Group IVB element oxides

Rare earth oxides

RL: TEM (Technical or engineered material use); USES (Uses)

(dielec.; method of forming a high-k dielec. film for a field effect transistor)

IT Metals, uses

RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)

(film; method of forming a high-k dielec. film for a field effect transistor)

IT Actinides

Group IIIA elements

Group IIIB elements

Group IVB elements

Rare earth metals, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(metal component; method of forming a high-k dielec. film for a field effect transistor)

IT Capacitors

Dielectric films

Electric contacts

Semiconductor devices

(method of forming a high-k dielec. film for a field effect transistor)

IT Oxides (inorganic), uses

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(method of forming a high-k dielec. film for a field effect transistor)

IT Plasma
(oxidation performed by; method of forming a high-k dielec. film for a field effect transistor)

IT IR radiation
(thermal oxidation performed by; method of forming a high-k dielec. film for a field effect transistor)

IT Oxidation
(thermal, surface; method of forming a high-k dielec. film for a field effect transistor)

IT 7631-86-9P, Silica, uses
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dielec.; method of forming a high-k dielec. film for a field effect transistor)

IT 1312-81-8, Lanthanumoxide 1314-23-4, Zirconium oxide, uses
1344-28-1, Alumina, uses 12055-23-1, Hafnium oxide
RL: TEM (Technical or engineered material use); USES (Uses)
(dielec.; method of forming a high-k dielec. film for a field effect transistor)

IT 7429-90-5, Aluminum, uses 7439-91-0, Lanthanum, uses
7440-58-6, Hafnium, uses 7440-67-7, Zirconium, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(metal component; method of forming a high-k dielec. film for a field effect transistor)

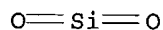
IT 7440-21-3, Silicon, uses
RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(method of forming a high-k dielec. film for a field effect transistor)

IT 7782-44-7, Oxygen, processes 10028-15-6, Ozone, processes
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(oxidant; method of forming a high-k dielec. film for a field effect transistor)

IT 7631-86-9P, Silica, uses
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dielec.; method of forming a high-k dielec. film for a field effect transistor)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 1344-28-1, Alumina, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(dielec.; method of forming a high-k dielec. film for a field effect transistor)

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 7439-91-0, Lanthanum, uses 7440-67-7, Zirconium, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(metal component; method of forming a high-k dielec. film for a field effect transistor)

RN 7439-91-0 HCAPLUS

CN Lanthanum (8CI, 9CI) (CA INDEX NAME)

La

RN 7440-67-7 HCAPLUS
 CN Zirconium (8CI, 9CI) (CA INDEX NAME)

Zr

L104 ANSWER 4 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:918094 HCAPLUS

DN 138:7576

ED Entered STN: 04 Dec 2002

TI **Far infrared-radiating** sheets and their
 composites for building materials

IN Tezuka, Masahiro

PA Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B32B009-00

ICS B32B005-16; B32B007-02; E04C002-04; E04C002-26; E04F013-08;
 E04F015-02

CC 58-4 (Cement, Concrete, and Related Building Materials)

FAN:CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2002347160 | A2 | 20021204 | JP 2001-161635 | 20010530 |
| PRAI | JP 2001-161635 | | 20010530 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|---|
| JP 2002347160 | ICM | B32B009-00 |
| | ICS | B32B005-16; B32B007-02; E04C002-04; E04C002-26; E04F013-08; E04F015-02 |

AB The sheet consists of a pair of surfacing layers sandwiching a **far IR-radiating** layer, comprising mineral powder compns. showing $\geq 80\%$ radiation (based on ideal black body) of **far IR** of 8-12 μm wavelength. Preferably, the mineral powder compns. contain main components of **SiO₂** 60-75, **Al₂O₃** 8-20, **Fe₂O₃** 1-5, **TiO₂** 0.1-1, **CaO** 2-4, **MgO** 1-3, **Na₂O** 3-5, **K₂O** 2-3, and **MnO** 0.01-1 weight% and ≥ 1 additives selected from P, **Ce**, **Ge**, **Zn**, **Cu**, **Co**, **Ni**, **Mo**, **Li**, **V**, **W**, **Ba**, and **Rb**. The sheets are suitable for walls, ceilings, floors, etc.

ST **far IR radiation** sheet mineral powder;
 building material **far IR radiation** sheet

IT **Construction materials**
 (decorative boards; **far IR-radiating**
 sheets comprising mineral powder and their use as building materials)

IT Veneers
 (**far IR-radiating** sheets comprising
 mineral powder and their use as building materials)

IT **IR radiation**
 (**far-IR**; **far IR-**
radiating sheets comprising mineral powder and their use as
 building materials)

IT **Construction materials**
 (gypsum boards; **far IR-radiating** sheets)

comprising mineral powder and their use as building materials)

IT Minerals, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (powders; far IR-radiating sheets
 comprising mineral powder and their use as building materials)

IT Mats
 (tatami; far IR-radiating sheets
 comprising mineral powder and their use as building materials)

IT 1305-78-8, Calcium oxide (CaO), uses
 1309-37-1, Iron oxide (Fe₂O₃), uses
 1309-48-4, Magnesium oxide (MgO),
 uses 1313-59-3, Sodium oxide, uses
 1344-28-1, Aluminum oxide (Al₂O₃),
 uses 1344-43-0, Manganese oxide (MnO
), uses 7439-93-2, Lithium, uses 7439-98-7,
 Molybdenum, uses 7440-02-0, Nickel, uses 7440-17-7,
 Rubidium, uses 7440-33-7, Tungsten, uses 7440-39-3,
 Barium, uses 7440-45-1, Cerium, uses
 7440-48-4, Cobalt, uses 7440-50-8,
 Copper, uses 7440-56-4, Germanium, uses
 7440-62-2, Vanadium, uses 7440-66-6, Zinc, uses
 7631-86-9, Silicon oxide (SiO₂), uses 7723-14-0,
 Phosphorus, uses 12136-45-7, Potassium oxide
 , uses 13463-67-7, Titanium oxide (TiO₂), uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (mineral powder containing; far IR-radiating
 sheets comprising mineral powder and their use as building materials)

IT 1305-78-8, Calcium oxide (CaO), uses
 1309-37-1, Iron oxide (Fe₂O₃), uses
 1309-48-4, Magnesium oxide (MgO),
 uses 1313-59-3, Sodium oxide, uses
 1344-28-1, Aluminum oxide (Al₂O₃),
 uses 1344-43-0, Manganese oxide (MnO
), uses 7439-93-2, Lithium, uses 7440-02-0,
 Nickel, uses 7440-39-3, Barium, uses
 7440-45-1, Cerium, uses 7440-48-4,
 Cobalt, uses 7440-50-8, Copper, uses
 7440-56-4, Germanium, uses 7440-66-6,
 Zinc, uses 7631-86-9, Silicon oxide (SiO₂),
 uses 12136-45-7, Potassium oxide, uses
 13463-67-7, Titanium oxide (TiO₂),
 uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (mineral powder containing; far IR-radiating
 sheets comprising mineral powder and their use as building materials)

RN 1305-78-8 HCAPLUS
 CN Calcium oxide (CaO) (9CI) (CA INDEX NAME)

Ca=O

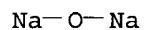
RN 1309-37-1 HCAPLUS
 CN Iron oxide (Fe₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1309-48-4 HCAPLUS
 CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

Mg=O

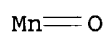
RN 1313-59-3 HCAPLUS
CN Sodium oxide (Na₂O) (9CI) (CA INDEX NAME)



RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1344-43-0 HCAPLUS
CN Manganese oxide (MnO) (8CI, 9CI) (CA INDEX NAME)



RN 7439-93-2 HCAPLUS
CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7440-02-0 HCAPLUS
CN Nickel (8CI, 9CI) (CA INDEX NAME)



RN 7440-39-3 HCAPLUS
CN Barium (8CI, 9CI) (CA INDEX NAME)



RN 7440-45-1 HCAPLUS
CN Cerium (8CI, 9CI) (CA INDEX NAME)



RN 7440-48-4 HCAPLUS
CN Cobalt (8CI, 9CI) (CA INDEX NAME)



RN 7440-50-8 HCAPLUS
CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7440-56-4 HCAPLUS
CN Germanium (7CI, 8CI, 9CI) (CA INDEX NAME)

Ge

RN 7440-66-6 HCAPLUS
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 12136-45-7 HCAPLUS
 CN Potassium oxide (K2O) (8CI, 9CI) (CA INDEX NAME)

K-O-K

RN 13463-67-7 HCAPLUS
 CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

L104 ANSWER 5 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:538344 HCAPLUS

DN 137:80801

ED Entered STN: 19 Jul 2002

TI Materials for **far IR radiation** generation
 and their products

IN Ueda, Sadako

PA Green Culture K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09K003-00

ICS D06M011-77; D21H017-68; D21H019-40; D21H021-14

CC 47-10 (Apparatus and Plant Equipment)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2002201458 | A2 | 20020719 | JP 2000-404964 | 20001231 |
| PRAI | JP 2000-404964 | | 20001231 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|--|
| JP 2002201458 | ICM | C09K003-00 |
| | ICS | D06M011-77; D21H017-68; D21H019-40; D21H021-14 |

AB The materials comprise shell fossils mainly consisting of **SiO2**
 63.9-78.3, **Al2O3** 11.6-14.2, **Fe2O3** 3.60-4.40,
MgO 1.52-1.86, **CaO** 1.73-2.13, **K2O** 2.70-3.32, n
P2O5 0.054-0.068 weight% and containing other trace elements, e.g.

Sr, Zr, Ru, Y, Ga, Zn, Cu,
 Ni, Mn, Ti, Cl, Na. The materials may also contain shell fossils
 comprising humus-soluble crystalline materials formed by sedimentation of
 calcareous and siliceous nektons, planktons, algae, seaweeds, etc. Blends
 of the said materials with natural materials, synthetic inorg., or
 synthetic organic materials, shaped products of the said materials blended
 with binders, or sheets and coverings of the said materials are also
 claimed.

- ST far IR radiation product shell fossil
- IT Plastic films
 - (far IR-radiating films; shell fossils as far IR radiating materials)
- IT Coating materials
 - Concrete
 - (far IR-radiating; shell fossils as far IR radiating materials)
- IT IR radiation
 - (far-IR; shell fossils as far IR radiating materials)
- IT Animal
 - (nektonic; shell fossils as far IR radiating materials)
- IT Algae
 - Calcareous materials (technological products)
 - Plankton
 - Seaweed
 - (shell fossils as far IR radiating materials)
- IT Siliceous materials
 - RL: TEM (Technical or engineered material use); USES (Uses)
 - (shell fossils as far IR radiating materials)
- IT Fossils
 - (shell; shell fossils as far IR radiating materials)
- IT 9002-88-4, Polyethylene
 - RL: TEM (Technical or engineered material use); USES (Uses)
 - (far IR-radiating films; shell fossils as far IR radiating materials)
- IT 1305-78-8, Calcium oxide (CaO), uses
 - 1309-37-1, Iron oxide (Fe₂O₃), uses
 - 1309-48-4, Magnesium oxide (MgO), uses
 - 1314-56-3, Phosphorus oxide (P₂O₅), uses
 - 1344-28-1, Aluminum oxide (Al₂O₃), uses
 - 7439-96-5, Manganese, uses 7440-02-0, Nickel, uses
 - 7440-18-8, Ruthenium, uses 7440-23-5, Sodium, uses
 - 7440-24-6, Strontium, uses 7440-32-6, Titanium, uses
 - 7440-50-8, Copper, uses 7440-55-3, Gallium, uses
 - 7440-65-5, Yttrium, uses 7440-66-6, Zinc, uses
 - 7440-67-7, Zirconium, uses 7631-86-9, Silicon oxide (SiO₂), uses
 - 7782-50-5, Chlorine, uses 12136-45-7, Potassium oxide, uses
 - RL: TEM (Technical or engineered material use); USES (Uses)
 - (shell fossils as far IR radiating materials)
- IT 1305-78-8, Calcium oxide (CaO), uses
 - 1309-37-1, Iron oxide (Fe₂O₃), uses
 - 1309-48-4, Magnesium oxide (MgO), uses
 - 1314-56-3, Phosphorus oxide (P₂O₅), uses
 - 1344-28-1, Aluminum oxide (Al₂O₃), uses
 - 7440-02-0, Nickel, uses 7440-24-6, Strontium, uses
 - 7440-50-8, Copper, uses

7440-65-5, Yttrium, uses 7440-66-6,
Zinc, uses 7440-67-7, Zirconium, uses
7631-86-9, Silicon oxide (SiO₂), uses 12136-45-7
, Potassium oxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(shell fossils as far IR radiating
materials)

RN 1305-78-8 HCAPLUS
CN Calcium oxide (CaO) (9CI) (CA INDEX NAME)

Ca=O

RN 1309-37-1 HCAPLUS
CN Iron oxide (Fe₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1309-48-4 HCAPLUS
CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

Mg=O

RN 1314-56-3 HCAPLUS
CN Phosphorus oxide (P₂O₅) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7440-02-0 HCAPLUS
CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

RN 7440-24-6 HCAPLUS
CN Strontium (8CI, 9CI) (CA INDEX NAME)

Sr

RN 7440-50-8 HCAPLUS
CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7440-65-5 HCAPLUS
CN Yttrium (8CI, 9CI) (CA INDEX NAME)

Y

RN 7440-66-6 HCAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 7440-67-7 HCAPLUS
 CN Zirconium (8CI, 9CI) (CA INDEX NAME)

Zr

RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 12136-45-7 HCAPLUS
 CN Potassium oxide (K2O) (8CI, 9CI) (CA INDEX NAME)

K-O-K

L104 ANSWER 6 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:491992 HCAPLUS

DN 137:311938

ED Entered STN: 01 Jul 2002

TI **Far infrared-radiating plastic and its**
 manufacture

IN Lim, Yong Ha

PA S. Korea

SO Repub. Korean Kongkae Taeho Kongbo, No pp. given
 CODEN: KRXXA7

DT Patent

LA Korean

IC ICM C08K003-00

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--------------------|------|----------|-----------------|----------|
| PI KR 2000072652 | A | 20001205 | KR 2000-54674 | 20000918 |
| PRAI KR 2000-54674 | | 20000918 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|------------------------------------|
| KR 2000072652 | ICM | C08K003-00 |

AB A plastic product prepared by compounding fine ceramic powder, which radiates far IR of 5-20 μ m wavelength, with conventional plastic has the effects of removing un-pleasant odor, absorbing harmful electromagnetic wave, promoting metabolism, restoring energy, reducing fatigue, and purifying air and comprises 50-100 parts of a synthetic resin, 10-40 parts of a compound selected from zeolite and aluminosilica gel, 1-20 parts of one or more compds. selected from Al₂O₃, Fe₂O₃, ZnO₂, ZrO₂, Co₃O₄, Ce₂O₃, Y₂O₃, V₂O₅, SnO₂, Nb₂O₃, TiO₂, LiO, P₂O₅, Na₂O₃, B₂O, K₂O, CuO, MoO, ZrO, FeO, MnO, MgO, CaO, NiO, BiO, SrO, TaC, SiC, and 0.05-10 parts of one or more elements selected Nd, Y, Ce, Sm

, La, Yb, Ag, C, Cr, Ni,
 Ba, Sr, Co, Cu, Li,
 Nb, Zr, Zn, Be, and Ge. The
 far IR-radiating material is calcined at
 800-1,500°, ground to the size of 0.15-5 µm, and mixed with the
 synthetic resin to produce the product.

ST far IR radiating plastic

IT Powders
 (ceramic; far IR-radiating plastic and
 its manufacture)

IT Carbides
 Oxides (inorganic), uses
 Zeolites (synthetic), uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (far IR-radiating plastic and its manufacture)

IT Plastics, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material
 use); USES (Uses)
 (far IR-radiating plastic and its manufacture)

IT Aluminosilicates, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (gel; far IR-radiating plastic and its
 manufacture)

IT Ceramics
 (powders; far IR-radiating plastic and
 its manufacture)

IT 409-21-2, Silicon carbide, uses 1305-78-8, Calcium
 oxide, uses 1308-06-1, Cobalt oxide (Co3O4)
 1309-37-1, Iron oxide, uses 1309-48-4
 , Magnesium oxide, uses 1313-99-1,
 Nickel oxide, uses 1314-11-0,
 Strontium oxide, uses 1314-22-3, Zinc
 dioxide 1314-23-4, Zirconium oxide, uses 1314-36-9,
 Yttrium oxide, uses 1314-56-3, Phosphorus pentaoxide,
 uses 1314-62-1, Vanadium oxide, uses 1317-38-0, Copper
 oxide, uses 1332-64-5, Bismuth oxide (BiO) 1344-28-1, Alumina,
 uses 1344-43-0, Manganese oxide, uses
 1345-13-7, Dicerium trioxide 1345-25-1, Iron
 oxide, uses 7439-91-0, Lanthanum, uses
 7439-93-2, Lithium, uses 7440-00-8,
 Neodymium, uses 7440-02-0, Nickel, uses
 7440-03-1, Niobium, uses 7440-19-9,
 Samarium, uses 7440-22-4, Silver, uses 7440-24-6,
 Strontium, uses 7440-39-3, Barium, uses
 7440-41-7, Beryllium, uses 7440-44-0, Carbon, uses
 7440-45-1, Cerium, uses 7440-47-3,
 Chromium, uses 7440-48-4, Cobalt, uses
 7440-50-8, Copper, uses 7440-56-4,
 Germanium, uses 7440-64-4, Ytterbium, uses
 7440-65-5, Yttrium, uses 7440-66-6,
 Zinc, uses 7440-67-7, Zirconium, uses
 12036-01-0, Zirconium monooxide 12045-60-2, Boron oxide (B2O)
 12057-24-8, Lithium oxide, uses 12058-07-0, Molybdenum oxide
 (MoO) 12059-63-1, Diniobium trioxide 12070-06-3, Tantalum carbide
 12136-45-7, Potassium oxide, uses
 13463-67-7, Titania, uses 18282-10-5, Tin dioxide
 208665-92-3, Sodium oxide (Na2O3)
 RL: MOA (Modifier or additive use); USES (Uses)
 (far IR-radiating plastic and its manufacture)

IT 1305-78-8, Calcium oxide, uses
 1309-37-1, Iron oxide, uses 1309-48-4
 , Magnesium oxide, uses 1313-99-1,
 Nickel oxide, uses 1314-11-0,

Strontium oxide, uses 1314-56-3, Phosphorus
pentaoxide, uses 1344-28-1, Alumina, uses 1344-43-0,
Manganese oxide, uses 1345-25-1, Iron
oxide, uses 7439-91-0, Lanthanum, uses
7439-93-2, Lithium, uses 7440-00-8,
Neodymium, uses 7440-02-0, Nickel, uses
7440-03-1, Niobium, uses 7440-19-9,
Samarium, uses 7440-24-6, Strontium, uses
7440-39-3, Barium, uses 7440-44-0, Carbon,
uses 7440-45-1, Cerium, uses 7440-47-3,
Chromium, uses 7440-48-4, Cobalt, uses
7440-50-8, Copper, uses 7440-56-4,
Germanium, uses 7440-64-4, Ytterbium, uses
7440-65-5, Yttrium, uses 7440-66-6,
Zinc, uses 7440-67-7, Zirconium, uses
12136-45-7, Potassium oxide, uses
13463-67-7, Titania, uses
RL: MOA (Modifier or additive use); USES (Uses)
(far IR-radiating plastic and its manufacture)

RN 1305-78-8 HCAPLUS
CN Calcium oxide (CaO) (9CI) (CA INDEX NAME)

Ca=O

RN 1309-37-1 HCAPLUS
CN Iron oxide (Fe₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1309-48-4 HCAPLUS
CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

Mg=O

RN 1313-99-1 HCAPLUS
CN Nickel oxide (NiO) (8CI, 9CI) (CA INDEX NAME)

Ni=O

RN 1314-11-0 HCAPLUS
CN Strontium oxide (SrO) (6CI, 8CI, 9CI) (CA INDEX NAME)

O=Sr

RN 1314-56-3 HCAPLUS
CN Phosphorus oxide (P₂O₅) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1344-43-0 HCAPLUS
CN Manganese oxide (MnO) (8CI, 9CI) (CA INDEX NAME)

Mn=O

RN 1345-25-1 HCAPLUS
CN Iron oxide (FeO) (8CI, 9CI) (CA INDEX NAME)

Fe=O

RN 7439-91-0 HCAPLUS
CN Lanthanum (8CI, 9CI) (CA INDEX NAME)

La

RN 7439-93-2 HCAPLUS
CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

RN 7440-00-8 HCAPLUS
CN Neodymium (8CI, 9CI) (CA INDEX NAME)

Nd

RN 7440-02-0 HCAPLUS
CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

RN 7440-03-1 HCAPLUS
CN Niobium (8CI, 9CI) (CA INDEX NAME)

Nb

RN 7440-19-9 HCAPLUS
CN Samarium (8CI, 9CI) (CA INDEX NAME)

Sm

RN 7440-24-6 HCAPLUS
CN Strontium (8CI, 9CI) (CA INDEX NAME)

Sr

RN 7440-39-3 HCAPLUS
CN Barium (8CI, 9CI) (CA INDEX NAME)

Ba

RN 7440-44-0 HCAPLUS
CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

C

RN 7440-45-1 HCAPLUS
CN Cerium (8CI, 9CI) (CA INDEX NAME)

Ce

RN 7440-47-3 HCAPLUS
CN Chromium (8CI, 9CI) (CA INDEX NAME)

Cr

RN 7440-48-4 HCAPLUS
CN Cobalt (8CI, 9CI) (CA INDEX NAME)

Co

RN 7440-50-8 HCAPLUS
CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7440-56-4 HCAPLUS
CN Germanium (7CI, 8CI, 9CI) (CA INDEX NAME)

Ge

RN 7440-64-4 HCAPLUS
CN Ytterbium (8CI, 9CI) (CA INDEX NAME)

Yb

RN 7440-65-5 HCAPLUS
CN Yttrium (8CI, 9CI) (CA INDEX NAME)

Y

RN 7440-66-6 HCAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 7440-67-7 HCAPLUS
CN Zirconium (8CI, 9CI) (CA INDEX NAME)

Zr

RN 12136-45-7 HCAPLUS
CN Potassium oxide (K2O) (8CI, 9CI) (CA INDEX NAME)

K-O-K

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

L104 ANSWER 7 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:401943 HCAPLUS
DN 133:51008
ED Entered STN: 16 Jun 2000
TI Composition of multipurpose far-infrared
radiation material
IN Kim, Young Keun
PA S. Korea
SO PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C09K011-08
ICS C09K011-59; C09K011-71
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other
Related Properties)
Section cross-reference(s): 8, 57, 61,
63

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|--|--------------|
| PI | WO 2000034411 | A1 | 20000615 | WO 1999-KR138 | 19990326 <-- |
| | W: | | | AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | |
| | RW: | | | GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | |
| | KR 2000038422 | A | 20000705 | KR 1998-53420 | 19981207 <-- |
| | AU 9928591 | A1 | 20000626 | AU 1999-28591 | 19990326 <-- |
| | EP 1141168 | A1 | 20011010 | EP 1999-909378 | 19990326 <-- |
| | R: | | | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | |
| PRAI | KR 1998-53420 | A | 19981207 | <-- | |
| | WO 1999-KR138 | W | 19990326 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|---|------------------------------------|
| WO 2000034411 | ICM | C09K011-08 |
| | ICS | C09K011-59; C09K011-71 |
| AB | A multipurpose far-IR radiating material are described which comprise 0.2-38 parts by weight of ≥ 1 non-metal compound selected from the group consisting of SiO ₂ and P ₂ O ₅ ; 0.01-70 parts by weight of ≥ 1 of TiO ₂ , Al ₂ O ₃ , Fe ₂ O ₃ , FeO, MnO, MgO, CaO, Na ₂ O, K ₂ O, Cr ₂ O ₃ , NiO, BaO, and SrO; 0.01-2 parts by weight of ≥ 1 of Nd, Y, Ce, Sm, La and Yb; and 0.02-18 parts by weight of ≥ 1 of C, Cr, Ni, Ba, Sr, Co, Cu, Li, Nb, Zr, Zn, and Ge. Applications as an antifungal material, antimicrobial material, water purification, for vital strength enhancement, control of underground waters, deodorization, electromagnetic shielding, and water quality enhancement are discussed. | |
| ST | IR radiating material | |
| IT | Optical materials (IR-emitting; multipurpose far-IR radiating materials) | |
| IT | Circulation (enhancement of; multipurpose far-IR radiating materials in relation to) | |
| IT | Water purification (filters; multipurpose far-IR radiating materials in relation to) | |
| IT | Groundwaters (located by dowsing; multipurpose far-IR radiating materials in relation to control of) | |
| IT | IR sources (multipurpose far-IR radiating materials) | |
| IT | Antimicrobial agents Deodorization Electromagnetic shields Fungicides Water purification (multipurpose far-IR radiating materials in relation to) | |
| IT | 1304-28-5, Barium oxide, uses 1305-78-8, Calcium oxide, uses 1308-38-9, Chromium oxide, uses 1309-37-1, Iron oxide, uses 1309-48-4 , Magnesium oxide, uses 1313-59-3, Sodium oxide, uses 1313-99-1, Nickel oxide, uses 1314-11-0, Strontium oxide , uses 1314-56-3, Phosphorus pentoxide, uses 1344-28-1, Aluminum oxide, uses 1344-43-0, Manganese oxide, uses 7439-91-0, Lanthanum, uses 7439-93-2, Lithium, uses 7440-00-8, Neodymium, uses 7440-02-0, Nickel, uses 7440-03-1, Niobium, uses 7440-19-9, Samarium, uses 7440-24-6, Strontium, uses 7440-39-3, Barium, uses 7440-44-0, Carbon, uses 7440-45-1 , Cerium, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-56-4, Germanium, uses 7440-64-4, Ytterbium, uses 7440-65-5, Yttrium, uses 7440-66-6, Zinc, uses 7440-67-7, Zirconium, uses 7631-86-9, | |

Silica, uses 12136-45-7, Potassium
oxide, uses 13463-67-7, Titanium oxide
, uses

RL: DEV (Device component use); USES (Uses)
(multipurpose far-IR radiating materials
containing)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) ASAHI Glass Co Ltd; JP 09-301734 A 1997 HCAPLUS
- (2) Hoya Corp; JP 62-065951 A 1987 HCAPLUS
- (3) Kuraray Co Ltd; JP 01-162823 A 1989 HCAPLUS
- (4) Nippon Sheet Glass Co Ltd; EP 0745566 A1 1996 HCAPLUS

IT 1304-28-5, Barium oxide, uses
1305-78-8, Calcium oxide, uses
1308-38-9, Chromium oxide, uses
1309-37-1, Iron oxide, uses 1309-48-4
, Magnesium oxide, uses 1313-59-3,
Sodium oxide, uses 1313-99-1, Nickel
oxide, uses 1314-11-0, Strontium oxide
, uses 1314-56-3, Phosphorus pentoxide, uses
1344-28-1, Aluminum oxide, uses
1344-43-0, Manganese oxide, uses
7439-91-0, Lanthanum, uses 7439-93-2,
Lithium, uses 7440-00-8, Neodymium, uses
7440-02-0, Nickel, uses 7440-03-1,
Niobium, uses 7440-19-9, Samarium, uses
7440-24-6, Strontium, uses 7440-39-3,
Barium, uses 7440-44-0, Carbon, uses 7440-45-1
, Cerium, uses 7440-47-3, Chromium, uses
7440-48-4, Cobalt, uses 7440-50-8,
Copper, uses 7440-56-4, Germanium, uses
7440-64-4, Ytterbium, uses 7440-65-5,
Yttrium, uses 7440-66-6, Zinc, uses
7440-67-7, Zirconium, uses 7631-86-9,
Silica, uses 12136-45-7, Potassium
oxide, uses 13463-67-7, Titanium oxide
, uses

RL: DEV (Device component use); USES (Uses)
(multipurpose far-IR radiating materials
containing)

RN 1304-28-5 HCAPLUS

CN Barium oxide (BaO) (9CI) (CA INDEX NAME)

Ba=O

RN 1305-78-8 HCAPLUS

CN Calcium oxide (CaO) (9CI) (CA INDEX NAME)

Ca=O

RN 1308-38-9 HCAPLUS

CN Chromium oxide (Cr2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

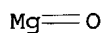
RN 1309-37-1 HCAPLUS

CN Iron oxide (Fe2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

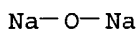
RN 1309-48-4 HCAPLUS

CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)



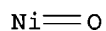
RN 1313-59-3 HCAPLUS

CN Sodium oxide (Na₂O) (9CI) (CA INDEX NAME)



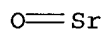
RN 1313-99-1 HCAPLUS

CN Nickel oxide (NiO) (8CI, 9CI) (CA INDEX NAME)



RN 1314-11-0 HCAPLUS

CN Strontium oxide (SrO) (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 1314-56-3 HCAPLUS

CN Phosphorus oxide (P₂O₅) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

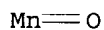
RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1344-43-0 HCAPLUS

CN Manganese oxide (MnO) (8CI, 9CI) (CA INDEX NAME)



RN 7439-91-0 HCAPLUS

CN Lanthanum (8CI, 9CI) (CA INDEX NAME)



RN 7439-93-2 HCAPLUS

CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7440-00-8 HCAPLUS

CN Neodymium (8CI, 9CI) (CA INDEX NAME)



RN 7440-02-0 HCAPLUS
CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

RN 7440-03-1 HCAPLUS
CN Niobium (8CI, 9CI) (CA INDEX NAME)

Nb

RN 7440-19-9 HCAPLUS
CN Samarium (8CI, 9CI) (CA INDEX NAME)

Sm

RN 7440-24-6 HCAPLUS
CN Strontium (8CI, 9CI) (CA INDEX NAME)

Sr

RN 7440-39-3 HCAPLUS
CN Barium (8CI, 9CI) (CA INDEX NAME)

Ba

RN 7440-44-0 HCAPLUS
CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

C

RN 7440-45-1 HCAPLUS
CN Cerium (8CI, 9CI) (CA INDEX NAME)

Ce

RN 7440-47-3 HCAPLUS
CN Chromium (8CI, 9CI) (CA INDEX NAME)

Cr

RN 7440-48-4 HCAPLUS
CN Cobalt (8CI, 9CI) (CA INDEX NAME)

Co

RN 7440-50-8 HCAPLUS
CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7440-56-4 HCAPLUS
CN Germanium (7CI, 8CI, 9CI) (CA INDEX NAME)

Ge

RN 7440-64-4 HCAPLUS
CN Ytterbium (8CI, 9CI) (CA INDEX NAME)

Yb

RN 7440-65-5 HCAPLUS
CN Yttrium (8CI, 9CI) (CA INDEX NAME)

Y

RN 7440-66-6 HCAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 7440-67-7 HCAPLUS
CN Zirconium (8CI, 9CI) (CA INDEX NAME)

Zr

RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 12136-45-7 HCAPLUS
CN Potassium oxide (K2O) (8CI, 9CI) (CA INDEX NAME)

K-O-K

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

L104 ANSWER 8 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2000:357030 HCAPLUS
 DN 132:348796
 ED Entered STN: 30 May 2000
 TI Fire-resistant polyolefin sheets containing fly ashes and metal hydroxides
 with **far-IR radiation** properties and good
 abrasion resistance and evolving no halogen gases during burning
 IN Chigiri, Kazuyoshi; Azuma, Yukihiro
 PA Hien Denko K. K., Japan
 SO Jpn. Kokai Tokkyo Koho, 4 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM D06N007-02
 ICS C09K021-02
 CC 38-3 (Plastics Fabrication and Uses)
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|--------------|-----------------|--------------|
| PI | JP 2000144581 | A2 | 20000526 | JP 1998-333376 | 19981110 <-- |
| PRAI | JP 1998-333376 | | 19981110 <-- | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|------------------------------------|
| JP 2000144581 | ICM | D06N007-02 |
| | ICS | C09K021-02 |

AB The sheets comprise polyolefins (A) and 40-110 parts metal hydroxides and
 10-70 parts fly ashes having particle diameter 10-30 μ m per 100 parts A.
 The sheets are useful for heaters (no data). A composition containing LLDPE
 100,

Mg(OH)₂ (Kisuma 5) 40, and fly ash (obtained from powdered coal burned in a
 thermal power plant; particle diameter 10-30 μ m) 70 parts was kneaded at
 220°, pelletized, and extruded to give a sheet 3 mm thick and
 exhibiting **radiation** ratio 0.921 as determined by a specified testing
 and showing number breakage (passing grade) on abrading the sheet for 300
 cycles using a load 1 kg according to the method of JIS C-3327 and fire
 extinction time ≤ 15 s (passing grade) as determined by the method of JIS
 C-3005.

ST polyolefin sheet fly ash fire resistant; LLDPE sheet fly ash fire
 resistant; polyethylene sheet fly ash fire resistant; ethylene vinyl
 acetate copolymer sheet fly ash fire resistant; ethyl acrylate ethylene
 copolymer sheet fly ash fire resistant; metal hydroxide fireproofing agent
 polyolefin sheet; magnesium hydroxide fireproofing agent polyolefin sheet;
 heater polyolefin sheet fire resistant

IT Silanes

RL: MOA (Modifier or additive use); USES (Uses)
 (coupling agents, for fly ash; fire-resistant polyolefin sheets containing
 fly ashes and metal hydroxides with **far-IR radiation** properties and good abrasion resistance and evolving
 no halogen gases during burning)

IT Abrasion-resistant materials

Fire-resistant materials

Fireproofing agents

(fire-resistant polyolefin sheets containing fly ashes and metal hydroxides
 with **far-IR radiation** properties and good
 abrasion resistance and evolving no halogen gases during burning)

IT Linear low density polyethylenes

Polyolefins

RL: PEP (Physical, engineering or chemical process); POF (Polymer in
 formulation); PRP (Properties); TEM (Technical or engineered material
 use); PROC (Process); USES (Uses)

(fire-resistant polyolefin sheets containing fly ashes and metal hydroxides

with **far-IR radiation** properties and good abrasion resistance and evolving no halogen gases during burning)

IT Heaters
(fire-resistant polyolefin sheets containing fly ashes and metal hydroxides with **far-IR radiation** properties and good abrasion resistance and evolving no halogen gases during burning for)

IT Hydroxides (inorganic)
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(fireproofing agent; fire-resistant polyolefin sheets containing fly ashes and metal hydroxides with **far-IR radiation** properties and good abrasion resistance and evolving no halogen gases during burning)

IT Ashes (residues)
(fly, fireproofing agent; fire-resistant polyolefin sheets containing fly ashes and metal hydroxides with **far-IR radiation** properties and good abrasion resistance and evolving no halogen gases during burning)

IT 74-85-1D, Ethene, polymers with α -olefins, uses
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(LLDPE; fire-resistant polyolefin sheets containing fly ashes and metal hydroxides with **far-IR radiation** properties and good abrasion resistance and evolving no halogen gases during burning)

IT 9002-88-4, Polyethylene 9010-86-0, Ethyl acrylate-ethylene copolymer 24937-78-8, Ethylene-vinyl acetate copolymer
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(fire-resistant polyolefin sheets containing fly ashes and metal hydroxides with **far-IR radiation** properties and good abrasion resistance and evolving no halogen gases during burning)

IT 1309-42-8, Kisuma 5 12125-28-9, Basic magnesium carbonate 12304-65-3, Hydrotalcite 21645-51-2, Aluminum hydroxide, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fireproofing agent; fire-resistant polyolefin sheets containing fly ashes and metal hydroxides with **far-IR radiation** properties and good abrasion resistance and evolving no halogen gases during burning)

IT 1332-37-2, Iron oxide, uses 1344-28-1, Alumina, uses 7440-44-0, Carbon, uses 7631-86-9, Silicon dioxide, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fly ash containing, fireproofing agent; fire-resistant polyolefin sheets containing fly ashes and metal hydroxides with **far-IR radiation** properties and good abrasion resistance and evolving no halogen gases during burning)

IT 1344-28-1, Alumina, uses 7440-44-0, Carbon, uses 7631-86-9, Silicon dioxide, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fly ash containing, fireproofing agent; fire-resistant polyolefin sheets containing fly ashes and metal hydroxides with **far-IR radiation** properties and good abrasion resistance and evolving no halogen gases during burning)

RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 7440-44-0 HCAPLUS
CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

C

RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

$$\text{O}=\text{Si}=\text{O}$$

L104 ANSWER 9 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2000:267051 HCAPLUS
 DN 132:266293
 ED Entered STN: 25 Apr 2000
 TI Highly transparent heat-wave-reflecting polyester films
 IN Nishiyama, Kiminori
 PA Teijin Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 4 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM B32B027-36
 ICS B32B027-20
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 56, 78

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 2000117919 | A2 | 20000425 | JP 1998-295274 | 19981016 <-- |
| PRAI | JP 1998-295274 | | 19981016 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|------------------------------------|
| JP 2000117919 | ICM | B32B027-36 |
| | ICS | B32B027-20 |

AB The title films, useful for building or automobile windows to reflect IR radiation, comprise a polyester film (e.g., biaxially stretched PET film) containing 0.001-0.01% inert particles (e.g., kaolin) with average diameter

0.3-1.0 μm , heat wave-reflecting layers (e.g., comprising metal layer, such as of Au, Ag, and/or Cu or its alloy, and dielec. layer, such as TiO_2 , Ta_2O_5 , ZrO_2 , SnO_2 , SiO , SiO_2 , In_2O_3 , and/or ZnO) with haze <0.8% and visible light transmittance >70% on ≥ 1 side of the polyester film, and protective layers (e.g., acrylic polymers, polyolefins, polypropylene) on the heat wave-reflecting layers.

ST transparent heat wave reflecting polyester film; metal layer heat wave reflecting polyester film; oxide dielec layer heat wave reflecting polyester film; polyolefin protective layer heat wave reflecting polyester film

IT Transparent films
 (highly transparent heat-wave-reflecting polyester films)

IT Kaolin, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (highly transparent heat-wave-reflecting polyester films)

IT Polyesters, uses
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (highly transparent heat-wave-reflecting polyester films)

IT Sputtering
 (of metal layers; highly transparent heat-wave-reflecting polyester

films)
 IT Acrylic polymers, uses
 Polyolefins
 RL: PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (protective surface layers; highly transparent heat-wave-reflecting polyester films)
 IT **IR radiation**
 (reflecting layer of; highly transparent heat-wave-reflecting polyester films)
 IT Metals, uses
 RL: PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (sputtering heat wave-reflecting layers; highly transparent heat-wave-reflecting polyester films)
 IT Optical properties
 (translucency; highly transparent heat-wave-reflecting polyester films)
 IT 1312-43-2, Indium oxide (In₂O₃) 1314-13-2, Zinc oxide (ZnO), uses
 1314-23-4, Zirconium oxide (ZrO₂), uses 1314-61-0, Tantalum oxide
 (Ta₂O₅) 7631-86-9, Silica, uses 13463-67-7, Titanium
 oxide (TiO₂), uses 18282-10-5, Tin oxide (SnO₂) 113443-18-8, Silicon
 oxide (SiO)
 RL: PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (dielec. layers; highly transparent heat-wave-reflecting polyester films)
 IT 25038-59-9, PET polyester, uses
 RL: PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (highly transparent heat-wave-reflecting polyester films)
 IT 9003-07-0, Polypropylene
 RL: PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (protective surface layers; highly transparent heat-wave-reflecting polyester films)
 IT 7440-22-4, Silver, uses 7440-50-8, Copper, uses 7440-57-5,
 Gold, uses
 RL: PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (sputtering heat wave-reflecting layers; highly transparent heat-wave-reflecting polyester films)
 IT 7631-86-9, Silica, uses 13463-67-7, Titanium oxide
 (TiO₂), uses
 RL: PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (dielec. layers; highly transparent heat-wave-reflecting polyester films)
 RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 13463-67-7 HCAPLUS
 CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT 7440-50-8, Copper, uses
 RL: PRP (Properties); TEM (Technical or engineered material use); USES

(Uses)

(sputtering heat wave-reflecting layers; highly transparent
heat-wave-reflecting polyester films)

RN 7440-50-8 HCAPLUS

CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

L104 ANSWER 10 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:238537 HCAPLUS

DN 132:238299

ED Entered STN: 14 Apr 2000

TI Manufacture of infrared-irradiating textiles

IN Bi, Jianhang

PA Peop. Rep. China

SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 5 pp.

CODEN: CNXXEV

DT Patent

LA Chinese

IC ICM D06M011-00

ICS D01F001-10

CC 40-2 (Textiles and Fibers)

Section cross-reference(s): 63

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | CN 1196418 | A | 19981021 | CN 1997-106379 | 19970415 <-- |
| PRAI | CN 1997-106379 | | 19970415 | <-- | |

CLASS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|----|--|-------|------------------------------------|
| | CN 1196418 | ICM | D06M011-00 |
| | | ICS | D01F001-10 |
| AB | Textiles contain 6-12% fine ceramic powder comprising TiO ₂ 50-80, Al ₂ O ₃ 5-40, SiO ₂ 5-35, La ₂ O ₃ 0.05-1.5, CaO 0.5-4, MgCO ₃ 0.5-4%, and metal dust (Al, Zn). | | |
| ST | IR irradiating textile ceramic powder | | |
| IT | IR radiation | | |
| | (IR-irradiating textiles containing ceramic powder) | | |
| IT | Oxides (inorganic), uses | | |
| | RL: MOA (Modifier or additive use); USES (Uses) | | |
| | (IR-irradiating textiles containing ceramic powder) | | |
| IT | Powders | | |
| | Powders | | |
| | (ceramic; IR-irradiating textiles containing ceramic powder) | | |
| IT | Polyester fibers, uses | | |
| | RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses) | | |
| | (fabrics; IR-irradiating textiles containing ceramic powder) | | |
| IT | Ceramics | | |
| | Ceramics | | |
| | (powders; IR-irradiating textiles containing ceramic powder) | | |
| IT | 546-93-0, Magnesium carbonate 1305-78-8, Calcia, uses | | |
| | 1312-81-8, Lanthanum oxide 1344-28-1, Alumina, uses | | |
| | 7429-90-5, Aluminum, uses 7440-66-6, Zinc, uses | | |
| | 7631-86-9, Silica, uses 13463-67-7, Titania, uses | | |
| | RL: MOA (Modifier or additive use); USES (Uses) | | |
| | (IR-irradiating textiles containing ceramic powder) | | |
| IT | 1305-78-8, Calcia, uses 1344-28-1, Alumina, uses | | |

7440-66-6, Zinc, uses 7631-86-9,
 Silica, uses 13463-67-7, Titania, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (IR-irradiating textiles containing ceramic powder)

RN 1305-78-8 HCAPLUS
 CN Calcium oxide (CaO) (9CI) (CA INDEX NAME)

Ca=O

RN 1344-28-1 HCAPLUS
 CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7440-66-6 HCAPLUS
 CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 13463-67-7 HCAPLUS
 CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

L104 ANSWER 11 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2000:120647 HCAPLUS
 DN 132:169957
 ED Entered STN: 22 Feb 2000
 TI Ceramic powders, fibers, fabrics, molded products, water purification
 agents, and soil amendments containing the ceramic powders
 IN Tsuboi, Susumu
 PA Nihon Denshi Keiraku Kenkokai K. K., Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C02F001-30
 ICS C09K017-02; D01F001-10; D06M011-36; C09K101-00
 CC 57-2 (Ceramics)
 Section cross-reference(s): 40, 60, 61

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 2000051848 | A2 | 20000222 | JP 1998-221983 | 19980805 <-- |
| | US 6462119 | B1 | 20021008 | US 1999-365502 | 19990802 <-- |
| PRAI | JP 1998-221983 | A | 19980805 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|---------------|-------|------------------------------------|
| JP 2000051848 | ICM | C02F001-30 |

- ICS C09K017-02; D01F001-10; D06M011-36; C09K101-00
- AB The ceramic powders are either (1) a mixture of a powder with 100 mesh or smaller obtained by pulverizing a ceramic produced from **Al₂O₃**, **SiO₂**, **FeO**, **NaO**, **MgO**, **KOH**, and **NaCl** and a powder containing **V**, **Al**, **Ti**, **Cr**, **Mn**, **Fe**, **Co**, **Ni**, **P**, **Cu**, **Zn**, **Y**, **Mg**, **S**, **Fe nitride**, **KBr**, **RbI**, and the likes with ≥99% purity or (2) a ceramic powder containing ≥2 of **Li**, **C**, **N**, and **F**, ≥4 of **Na**, **Mg**, **Al**, **Si**, **P**, **S**, and **Cl**, and ≥3 of **K**, **Ca**, **Ti**, **Cr**, **Mn**, **Zn**, **Cu**, and **Co**. Fibers, fabrics, molded products, water purification agents, and soil amendment agents contain either one of the ceramic powders. Owing to functions, e.g. electromagnetic wave **radiation**, reduction, antioxidant function, etc., of the ceramic powders, those products using the ceramic powders are applicable to various purposes, e.g. water purification, soil remediation, disinfection, deodorization, etc.
- ST ceramic powder string fabric molded product; water purifn soil amendment ceramic powder
- IT Soil amendments
Water purification
 (ceramic materials for; ceramic powder and functional products produced using the ceramic powder for water purification, soil amendment, disinfection, and deodorization)
- IT **Ceramics**
Deodorants
Disinfectants
 (ceramic powder and functional products produced using the ceramic powder for water purification, soil amendment, disinfection, and deodorization)
- IT Synthetic fibers
 RL: TEM (Technical or engineered material use); USES (Uses)
 (ceramic, made of ceramic powder; ceramic powder and functional products produced using the ceramic powder for water purification, soil amendment, disinfection, and deodorization)
- IT **Ceramics**
 (fibers, made of ceramic powder; ceramic powder and functional products produced using the ceramic powder for water purification, soil amendment, disinfection, and deodorization)
- IT Textiles
 (made of ceramic powder; ceramic powder and functional products produced using the ceramic powder for water purification, soil amendment, disinfection, and deodorization)
- IT **1309-48-4, Magnesium oxide (MgO)**,
 uses **1310-58-3, Potassium hydroxide (K(OH))**, uses **1313-59-3, Sodium oxide (Na₂O)**, uses **1344-28-1, Aluminum oxide (Al₂O₃)**, uses **1345-25-1, Iron oxide (FeO)**, uses **7429-90-5, Aluminum**, uses **7439-89-6, Iron**, uses **7439-95-4, Magnesium**, uses **7439-96-5, Manganese**, uses **7440-02-0, Nickel**, uses **7440-32-6, Titanium**, uses **7440-47-3, Chromium**, uses **7440-48-4, Cobalt**, uses **7440-50-8, Copper**, uses **7440-62-2, Vanadium**, uses **7440-65-5, Yttrium**, uses **7440-66-6, Zinc**, uses **7631-86-9, Silica**, uses **7647-14-5, Sodium chloride (NaCl)**, uses **7704-34-9, Sulfur**, uses **7723-14-0, Phosphorus**, uses **7758-02-3, Potassium bromide (KBr)**, uses **7790-29-6, Rubidium iodide (RbI)** **37245-77-5, Iron nitride**
 RL: TEM (Technical or engineered material use); USES (Uses)
 (ceramic powder containing; ceramic powder and functional products produced using the ceramic powder for water purification, soil amendment, disinfection, and deodorization)
- IT **1309-48-4, Magnesium oxide (MgO)**,
 uses **1313-59-3, Sodium oxide (Na₂O)**

), uses 1344-28-1, Aluminum oxide (Al₂O₃), uses 1345-25-1, Iron oxide (FeO), uses 7440-02-0, Nickel, uses 7440-47-3, Chromium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-65-5, Yttrium, uses 7440-66-6, Zinc, uses 7631-86-9, Silica, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(ceramic powder containing; ceramic powder and functional products produced using the ceramic powder for water purification, soil amendment, disinfection, and deodorization)

RN 1309-48-4 HCAPLUS
CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

Mg=O

RN 1313-59-3 HCAPLUS
CN Sodium oxide (Na₂O) (9CI) (CA INDEX NAME)

Na-O-Na

RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1345-25-1 HCAPLUS
CN Iron oxide (FeO) (8CI, 9CI) (CA INDEX NAME)

Fe=O

RN 7440-02-0 HCAPLUS
CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

RN 7440-47-3 HCAPLUS
CN Chromium (8CI, 9CI) (CA INDEX NAME)

Cr

RN 7440-48-4 HCAPLUS
CN Cobalt (8CI, 9CI) (CA INDEX NAME)

Co

RN 7440-50-8 HCAPLUS
CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7440-65-5 HCAPLUS
CN Yttrium (8CI, 9CI) (CA INDEX NAME)

Y

RN 7440-66-6 HCAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 12 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:505612 HCAPLUS

DN 131:146452

ED Entered STN: 16 Aug 1999

TI Method for preparing multi-purpose mineral powder capable of emitting large quantities of **far IR-radiation**, negative ions, and oxygen upon heating

IN Kong, Byung-Suk

PA Kim, Yong-Mi, S. Korea

SO U.S., 9 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM A61K033-12

ICS A61K033-14

NCL 252001000

CC 49-4 (Industrial Inorganic Chemicals)

Section cross-reference(s): 8, 73

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | US 5935483 | A | 19990810 | US 1997-846508 | 19970429 <-- |
| PRAI | US 1997-846508 | | 19970429 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|-------|------------------------------------|
| US 5935483 | ICM | A61K033-12 |
| | ICS | A61K033-14 |
| | NCL | 252001000 |

AB The invention relates to multi-purpose mineral powder emitting the large quantities of **far IR** rays, neg. ion and oxygen heat.
The powder comprises germanium 20 weight%, clinocllore 10 weight%, jade 10 weight%,

zeolite of 10 weight%, and halite 50 weight%. The ingredients are pulverized to

.apprx.300 mesh, placed into an inner surface having silver leaf (Ag) of an internal furnace made of chondrodite, heated through a heating plate for nine days at .apprx.1000° so as to have thermal deformation after placing chondrodite pulverized to .apprx. 200 mesh between the inner surface of the elec. heating plate and the outer surface of the internal

furnace, and then pulverized to about 325 mesh.

ST mineral powder manuf **far IR** emission

IT **IR radiation**
(**far-IR**; multi-purpose mineral powder and its manufacture)

IT IR sources
Negative ion sources
(method for preparing mineral powder capable of emitting large quantities of **far-IR radiation**, neg. ions, and oxygen upon heating)

IT Powders
(mineral; multi-purpose mineral powder and its manufacture)

IT Zeolites (synthetic), processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(multi-purpose mineral powder and its manufacture)

IT 1305-78-8, Calcia, uses 1309-37-1, Iron oxide (Fe₂O₃),
uses 1309-48-4, Magnesia, uses 1313-59-3, Sodium
oxide, uses 1344-28-1, Aluminum oxide (Al₂O₃), uses
1344-43-0, Manganese oxide MnO, uses 7631-86-9, Silica,
uses 12136-45-7, Potassium oxide, uses 13463-67-7,
Titania, uses 14808-79-8, Sulfate, uses
RL: ANT (Analyte); TEM (Technical or engineered material use); ANST
(Analytical study); USES (Uses)
(multi-purpose mineral powder and its manufacture)

IT 7440-22-4, Silver, uses 65430-39-9, Chondrodite
RL: DEV (Device component use); USES (Uses)
(multi-purpose mineral powder and its manufacture)

IT 7440-56-4, Germanium, processes 12252-52-7, Clinocllore
12601-21-7, Jade 14762-51-7, Halite
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(multi-purpose mineral powder and its manufacture)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Fleming; US 4477580 1984 HCAPLUS
- (2) Johnson; US 4376709 1983 HCAPLUS
- (3) Korea Ore Research Institute; Espino Rare Materials 1996, P1
- (4) Korea Ore Research Institute; Piopower Rare Materials 1996, P1
- (5) Mo; US 5597550 1997 HCAPLUS

IT 1305-78-8, Calcia, uses 1309-37-1, Iron oxide (Fe₂O₃),
uses 1309-48-4, Magnesia, uses 1313-59-3, Sodium
oxide, uses 1344-28-1, Aluminum oxide (Al₂O₃), uses
1344-43-0, Manganese oxide MnO, uses 7631-86-9, Silica,
uses 12136-45-7, Potassium oxide, uses 13463-67-7,
Titania, uses
RL: ANT (Analyte); TEM (Technical or engineered material use); ANST
(Analytical study); USES (Uses)
(multi-purpose mineral powder and its manufacture)

RN 1305-78-8 HCAPLUS

CN Calcium oxide (CaO) (9CI) (CA INDEX NAME)

Ca=O

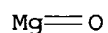
RN 1309-37-1 HCAPLUS

CN Iron oxide (Fe₂O₃) (8CI, 9CI) (CA INDEX NAME)

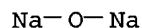
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1309-48-4 HCAPLUS

CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)



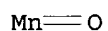
RN 1313-59-3 HCAPLUS
CN Sodium oxide (Na2O) (9CI) (CA INDEX NAME)



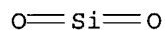
RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

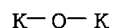
RN 1344-43-0 HCAPLUS
CN Manganese oxide (MnO) (8CI, 9CI) (CA INDEX NAME)



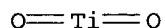
RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 12136-45-7 HCAPLUS
CN Potassium oxide (K2O) (8CI, 9CI) (CA INDEX NAME)



RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT 7440-56-4, Germanium, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(multi-purpose mineral powder and its manufacture)
RN 7440-56-4 HCAPLUS
CN Germanium (7CI, 8CI, 9CI) (CA INDEX NAME)

Ge

L104 ANSWER 13 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:426829 HCAPLUS
DN 131:75081
ED Entered STN: 12 Jul 1999
TI Method and polymer compositions for laser imprinting articles with
enhanced durability and permanence
IN Condit, David A.; Budnik, Daniel J.
PA Otis Elevator Company, USA
SO U.S., 11 pp., Cont.-in-part of U.S. Ser. No. 594,053, abandoned.

CODEN: USXXAM
 DT Patent
 LA English
 IC ICM C08K003-00
 NCL 524413000
 CC 42-13 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 37, 73, 74

FAN.CNT 3

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|--|------|----------|-----------------|--------------|
| PI | US 5919853 | A | 19990706 | US 1997-895313 | 19970716 <-- |
| | WO 9903688 | A1 | 19990128 | WO 1998-US14473 | 19980715 <-- |
| | W: CN, JP | | | | |
| | RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE | | | | |
| | EP 996549 | A1 | 20000503 | EP 1998-936836 | 19980715 <-- |
| | EP 996549 | B1 | 20030409 | | |
| | R: DE, FR, GB | | | | |
| | JP 2001510109 | T2 | 20010731 | JP 2000-502948 | 19980715 <-- |
| PRAI | US 1996-594053 | B2 | 19960130 | <-- | |
| | US 1997-895312 | A | 19970716 | <-- | |
| | US 1997-895313 | A | 19970716 | <-- | |
| | US 1997-895314 | A | 19970716 | <-- | |
| | WO 1998-US14473 | W | 19980715 | <-- | |

CLASS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|----|---|-------|------------------------------------|
| | US 5919853 | ICM | C08K003-00 |
| | | NCL | 524413000 |
| AB | A method of imprinting a workpiece includes lasing the workpiece to create a depression or other opening, depositing a laser-fusible polymer material, preferably $\leq 45 \mu\text{m}$, into the depression, and then lasing the material to fuse the material into the depression. Preferably, the laser-fusible polymer material is fusible in the near IR spectrum, and can include an absorber. An alternate method using colored powder paints for imprinting includes an addnl. step of heating the workpiece to ensure thermosetting of the colored powder paint. A laser-fusible composition comprises a major component of styrene acrylic polymer, iron oxide, polyolefin, and silica, and a minor component of polyester, carbon black and titanium dioxide. The method provides durability and permanence similar to mech. engraving with reduced creation of hazardous wastes. | | |
| ST | laser imprinting method fusible polymer compn; styrene acrylic polymer laser imprinting; iron oxide compn laser imprinting; polyolefin compn laser imprinting; silica compn laser imprinting; polyester compn laser imprinting; carbon black compn laser imprinting; titanium dioxide compn laser imprinting | | |
| IT | Etching (dry, laser-induced; method and polymer compns. for laser imprinting articles with enhanced durability and permanence) | | |
| IT | Hazardous wastes (industrial, elimination of; in method and polymer compns. for laser imprinting articles with enhanced durability and permanence) | | |
| IT | Marking (method and polymer compns. for laser imprinting articles with enhanced durability and permanence) | | |
| IT | Carbon black, uses RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses) (method and polymer compns. for laser imprinting articles with enhanced durability and permanence) | | |
| IT | Polyesters, uses RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses) | | |

(method and polymer compns. for laser imprinting articles with enhanced durability and permanence)

IT Polyolefins
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(method and polymer compns. for laser imprinting articles with enhanced durability and permanence)

IT IR radiation
(near-IR, absorbers for; method and polymer compns. for laser imprinting articles with enhanced durability and permanence)

IT IR laser radiation
(near-IR; method and polymer compns. for laser imprinting articles with enhanced durability and permanence)

IT Acrylic polymers, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(styrene-containing; method and polymer compns. for laser imprinting articles with enhanced durability and permanence)

IT Nickel alloy
RL: MOA (Modifier or additive use); USES (Uses)
(superalloy powder; method and polymer compns. for laser imprinting articles with enhanced durability and permanence)

IT 1332-37-2, Iron oxide, uses 7631-86-9, Silica, uses 13463-67-7, Titanium dioxide, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(method and polymer compns. for laser imprinting articles with enhanced durability and permanence)

IT 100-42-5D, Styrene, polymers with acrylic compds.
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(method and polymer compns. for laser imprinting articles with enhanced durability and permanence)

IT 147-14-8, Copper phthalocyanine
RL: MOA (Modifier or additive use); USES (Uses)
(near IR absorber; method and polymer compns. for laser imprinting articles with enhanced durability and permanence)

IT 7440-02-0, Nickel, uses
RL: MOA (Modifier or additive use); USES (Uses)
(submicron powder; method and polymer compns. for laser imprinting articles with enhanced durability and permanence)

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Anon; GB 1229243 1971
- (2) Anon; JP 01241500 1989
- (3) Anon; EP 0415674A2 1991
- (4) Anon; WO 9205967 1992
- (5) Anon; EP 0627330A1 1994
- (6) Anon; EP 0644234A1 1995
- (7) Anon; FR 2744066 1997 HCAPLUS
- (8) Anon; WO 9205967 1997
- (9) Anon; French Search Report for Serial No 9700752 1998
- (10) Anon; PCT Search Report for Serial No PCT/US98/14473 1998
- (11) Locklear; US 5239158 1993
- (12) Schoch; US 4578318 1986

IT 7631-86-9, Silica, uses 13463-67-7, Titanium dioxide, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(method and polymer compns. for laser imprinting articles with enhanced durability and permanence)

RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 13463-67-7 HCAPLUS
 CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT 7440-02-0, Nickel, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (submicron powder; method and polymer compns. for laser imprinting
 articles with enhanced durability and permanence)
 RN 7440-02-0 HCAPLUS
 CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

L104 ANSWER 14 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1999:130755 HCAPLUS
 DN 130:183563
 ED Entered STN: 01 Mar 1999
 TI **Far-IR-radiating** plastic moldings, their
 application, and manufacturing apparatus for the same
 IN Mizuno, Takeshi; Nakamura, Hiromasa
 PA Echopack K. K., Japan; Taiko K. K.
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM B29C047-00
 ICS A01G009-02; B32B005-02; C08J005-00; C08L023-00; C08L067-00;
 B29K001-00; B29K103-04; B29K105-04; B29K105-26; B29L007-00
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 11, 17, 63
 FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------------|------|----------|-----------------|--------------|
| PI JP 11048303 | A2 | 19990223 | JP 1997-220791 | 19970731 <-- |
| PRAI JP 1997-220791 | | 19970731 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|--|
| JP 11048303 | ICM | B29C047-00 |
| | ICS | A01G009-02; B32B005-02; C08J005-00; C08L023-00; C08L067-00; B29K001-00; B29K103-04; B29K105-04; B29K105-26; B29L007-00 |

AB The moldings, preferably sheets or foams, comprise powders of (processed) plants, **far-IR-radiating** powders, and polyolefins and/or biodegradable resins. The (processed) plants may be coffee dregs, beer lees, (rice) bran, soybean hulls, squeezed residues of soybean sauce, paper, woods, bamboo, or their mixts. The **far-IR-radiating** substances may be charcoal, active carbon, natural ores, or their mixts. Sheet-type moldings, which are useful for antibacterial mushroom packages, vegetable (or fruit) packages, or mulches, may be coated with (nonwoven) fabrics, silks, or synthetic resin sheets. The sheet-type moldings may be cushions, bed mats, or medical

goods. Also claimed are apps. providing above moldings, including blenders, heat extruders, and nozzle systems conducting water expansion. Thus, powdered flour dreg 60, charcoal 5, and polypropylene 40 parts were blended and molded in an apparatus described as above to give a cellular sheet showing deodorizing activity 90.5% to 20-ppm Me3N at 20° and measuring time 1 h.

- ST **far IR radiating** polyolefin package mat;
processed food lee blended biodegradable molding; charcoal ore blended medical plastic good; ecol material plant residue blended plastic
- IT Household furnishings
(bedding, bed mats; **far-IR-radiating**
plastic moldings containing plant-derived wastes for packages, cushions,
and medical goods)
- IT Polymers, uses
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or
engineered material use); USES (Uses)
(biodegradable; **far-IR-radiating** plastic
moldings containing plant-derived wastes for packages, cushions, and
medical goods)
- IT Rice (*Oryza sativa*)
(bran; **far-IR-radiating** plastic moldings
containing plant-derived wastes for packages, cushions, and medical goods)
- IT Furniture
(chairs; **far-IR-radiating** plastic
moldings containing plant-derived wastes for packages, cushions, and
medical goods)
- IT Coffee (*Coffea*)
(dregs of; **far-IR-radiating** plastic
moldings containing plant-derived wastes for packages, cushions, and
medical goods)
- IT **IR radiation**
(**far-IR**, materials; **far-IR-**
radiating plastic moldings containing plant-derived wastes for
packages, cushions, and medical goods)
- IT Bamboo
Cushions
Ecology
Food packaging materials
Fruit
Medical goods
Molding of plastics and rubbers
Mulches
Mushroom
Nonwoven fabrics
Paper
Silk
Textiles
Vegetable
Wood
(**far-IR-radiating** plastic moldings containing
plant-derived wastes for packages, cushions, and medical goods)
- IT Charcoal
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or
engineered material use); USES (Uses)
(**far-IR-radiating** plastic moldings containing
plant-derived wastes for packages, cushions, and medical goods)
- IT Polyolefins
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or
engineered material use); USES (Uses)
(**far-IR-radiating** plastic moldings containing
plant-derived wastes for packages, cushions, and medical goods)
- IT Molding apparatus
(for polymers; **far-IR-radiating** plastic

moldings containing plant-derived wastes for packages, cushions, and medical goods)

IT Soybean (Glycine max)
(hulls or sauce-squeezed residues; **far-IR-radiating** plastic moldings containing plant-derived wastes for packages, cushions, and medical goods)

IT Beer
(lees; **far-IR-radiating** plastic moldings containing plant-derived wastes for packages, cushions, and medical goods)

IT Ore deposits
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(natural; **far-IR-radiating** plastic moldings containing plant-derived wastes for packages, cushions, and medical goods)

IT Bran
(rice; **far-IR-radiating** plastic moldings containing plant-derived wastes for packages, cushions, and medical goods)

IT Deodorants
(sheets, cellular; **far-IR-radiating** plastic moldings containing plant-derived wastes for packages, cushions, and medical goods)

IT Soy sauce
(squeezed residues; **far-IR-radiating** plastic moldings containing plant-derived wastes for packages, cushions, and medical goods)

IT 7440-44-0, Carbon, uses
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(active; **far-IR-radiating** plastic moldings containing plant-derived wastes for packages, cushions, and medical goods)

IT 9003-07-0
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(cellular; **far-IR-radiating** plastic moldings containing plant-derived wastes for packages, cushions, and medical goods)

IT 1305-78-8, Calcia, uses 1309-37-1, Iron oxide (Fe2O3), uses 1313-59-3, Sodium oxide, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 12136-45-7, Potassium oxide, uses
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(ore containing; **far-IR-radiating** plastic moldings containing plant-derived wastes for packages, cushions, and medical goods)

IT 7440-44-0, Carbon, uses
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(active; **far-IR-radiating** plastic moldings containing plant-derived wastes for packages, cushions, and medical goods)

RN 7440-44-0 HCAPLUS

CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

C

IT 1305-78-8, Calcia, uses 1309-37-1, Iron oxide (Fe2O3), uses 1313-59-3, Sodium oxide, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 12136-45-7, Potassium

oxide, uses

RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(ore containing; **far-IR-radiating** plastic moldings containing plant-derived wastes for packages, cushions, and medical goods)

RN 1305-78-8 HCAPLUS

CN Calcium oxide (CaO) (9CI) (CA INDEX NAME)

Ca=O

RN 1309-37-1 HCAPLUS

CN Iron oxide (Fe2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1313-59-3 HCAPLUS

CN Sodium oxide (Na2O) (9CI) (CA INDEX NAME)

Na-O-Na

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 12136-45-7 HCAPLUS

CN Potassium oxide (K2O) (8CI, 9CI) (CA INDEX NAME)

K-O-K

L104 ANSWER 15 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:116545 HCAPLUS

DN 130:183998

ED Entered STN: 22 Feb 1999

TI **Far IR-radiating**, antibacterial, deodorant, antifungal, mildew-proof paper with antistatic effect and its manufacturing method

IN Maeda, Nobuhide

PA Ohara Sanwa K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM D21H017-67

ICS D21H021-36

CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)

Section cross-reference(s): 57

FAN.CNT 1

PATENT NO.

KIND

DATE

APPLICATION NO.

DATE

PI JP 11043896 A2 19990216 JP 1997-209722 19970718 <--
 PRAI JP 1997-209722 19970718 <--

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|---|------------------------------------|
| JP 11043896 | ICM | D21H017-67 |
| | ICS | D21H021-36 |
| AB | The method includes adding a composite ceramics to the paper stock during the beating process, where the composite ceramics comprises a base material of amphibole, magnesia, and carbon powder and an additive of serpentine, granite, silica, titanium, and/or quartz diorite. | |
| ST | far IR radiating antistatic paper; deodorant antifungal mildewproof antistatic paper; amphibole magnesia carbon antistatic paper | |
| IT | Ceramics (ceramic composite additive; far IR-radiating , antibacterial, deodorant, antifungal, mildew-proof paper with antistatic effect and its manufacture) | |
| IT | Amphibole-group minerals Granite, uses Serpentine-group minerals RL: MOA (Modifier or additive use); USES (Uses) (ceramic composite additive; far IR-radiating , antibacterial, deodorant, antifungal, mildew-proof paper with antistatic effect and its manufacture) | |
| IT | Antibacterial agents Antistatic agents Fungicides IR radiation Paper (far IR-radiating , antibacterial, deodorant, antifungal, mildew-proof paper with antistatic effect and its manufacture) | |
| IT | Diorite RL: MOA (Modifier or additive use); USES (Uses) (quartz, ceramic composite additive; far IR-radiating , antibacterial, deodorant, antifungal, mildew-proof paper with antistatic effect and its manufacture) | |
| IT | 1309-48-4, Magnesia, uses 7440-32-6, Titanium, uses 7440-44-0, Carbon, uses 7631-86-9, Silica, uses RL: MOA (Modifier or additive use); USES (Uses) (ceramic composite additive; far IR-radiating , antibacterial, deodorant, antifungal, mildew-proof paper with antistatic effect and its manufacture) | |
| IT | 1309-48-4, Magnesia, uses 7440-44-0, Carbon, uses 7631-86-9, Silica, uses RL: MOA (Modifier or additive use); USES (Uses) (ceramic composite additive; far IR-radiating , antibacterial, deodorant, antifungal, mildew-proof paper with antistatic effect and its manufacture) | |
| RN | 1309-48-4 HCAPLUS | |
| CN | Magnesium oxide (MgO) (9CI) (CA INDEX NAME) | |

Mg=O

RN 7440-44-0 HCAPLUS
 CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 16 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:101225 HCAPLUS

DN 130:183990

ED Entered STN: 16 Feb 1999

TI Bactericidal deodorant antimildew insecticidal Japanese paper having
far infrared radiation properties and
 antistatic effects and manufacture thereof

IN Maeda, Nobuhide

PA Ohara Sanwa K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM D21H021-14

ICS A01N061-00; C09K003-16; D21H017-67

CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 11036189 | A2 | 19990209 | JP 1997-201051 | 19970711 <-- |
| PRAI | JP 1997-201051 | | 19970711 | <-- | |

CLASS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|----|--|-------|------------------------------------|
| | JP 11036189 | ICM | D21H021-14 |
| | | ICS | A01N061-00; C09K003-16; D21H017-67 |
| AB | Ceramic additives for paper contain hornblende, magnesia, C, serpentine, granite-porphry, quartz diorite, silica, and Ti. Thus, a mixture contained hornblende 25, serpentine 25, magnesia 20, silica 20, and C 10%. | | |
| ST | bactericidal deodorant antimildew insecticidal Japanese paper; ceramic additive Japanese paper; antistatic Japanese paper ceramic additive | | |
| IT | Paper (Japanese; bactericidal deodorant antimildew insecticidal Japanese paper having far IR radiation properties containing ceramic additives) | | |
| IT | Antibacterial agents Antistatic agents Ceramics Deodorants Fungicides Insecticides (bactericidal deodorant antimildew insecticidal Japanese paper having far IR radiation properties containing ceramic additives) | | |
| IT | Granite porphyry Serpentine-group minerals RL: BUU (Biological use, unclassified); MOA (Modifier or additive use); BIOL (Biological study); USES (Uses) (bactericidal deodorant antimildew insecticidal Japanese paper having far IR radiation properties containing ceramic additives) | | |
| IT | IR radiation (far-IR; bactericidal deodorant antimildew insecticidal Japanese paper having far IR | | |

radiation properties containing ceramic additives)

IT Diorite
 RL: BUU (Biological use, unclassified); MOA (Modifier or additive use);
 BIOL (Biological study); USES (Uses)
 (quartz; bactericidal deodorant antimildew insecticidal Japanese paper
 having far IR radiation properties containing
 ceramic additives)

IT 1309-48-4, Magnesia, uses 7440-32-6, Titanium, uses
 7440-44-0, Carbon, uses 7631-86-9, Silica, uses
 12178-42-6, Hornblende
 RL: BUU (Biological use, unclassified); MOA (Modifier or additive use);
 BIOL (Biological study); USES (Uses)
 (bactericidal deodorant antimildew insecticidal Japanese paper having
 far IR radiation properties containing ceramic
 additives)

IT 1309-48-4, Magnesia, uses 7440-44-0, Carbon, uses
 7631-86-9, Silica, uses
 RL: BUU (Biological use, unclassified); MOA (Modifier or additive use);
 BIOL (Biological study); USES (Uses)
 (bactericidal deodorant antimildew insecticidal Japanese paper having
 far IR radiation properties containing ceramic
 additives)

RN 1309-48-4 HCAPLUS
 CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

Mg=O

RN 7440-44-0 HCAPLUS
 CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

C

RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 17 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1998:788911 HCAPLUS
 DN 130:67869
 ED Entered STN: 16 Dec 1998
 TI Manufacture of coating materials having far-IR
 emission, antibacterial, antifungal, deodorant, insecticidal properties,
 and antistatic effects
 IN Maeda, Nobuhide
 PA Ohara Sanwa K. K., Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C09D005-14
 ICS A01N059-16; A61L002-16; C09D005-00; C09D007-12; C09K003-00
 CC 42-10 (Coatings, Inks, and Related Products)
 FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|-------|-----------------|-------|
| ----- | ---- | ----- | ----- | ----- |

PI JP 10324825 A2 19981208 JP 1997-149963 19970526 <--
 JP 2920123 B2 19990719
 PRAI JP 1997-149963 19970526 <--

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|---|
| JP 10324825 | ICM | C09D005-14 |
| | ICS | A01N059-16; A61L002-16; C09D005-00; C09D007-12; C09K003-00 |
| AB | | The title involves using 40-69% serpentine of particle diameter $\leq 15 \mu\text{m}$ and 5-15% carbon as the base material, adding 15-25% titanium of particle diameter $\leq 15 \mu\text{m}$ and 15-25% magnesia of particle diameter $\leq 15 \mu\text{m}$, running several times through a mixer and pulverized for uniform mixing, calcining the mixture at 200-500°, adding 3-15% the resulting composite ceramic materials to a coating materials, and stir mixing. |
| ST | | serpentine carbon composite ceramic coating additive |
| IT | | IR radiation (far-IR; manufacture of coating materials having far-IR emission, antibacterial, antifungal, deodorant, insecticidal properties, and antistatic effects) |
| IT | | Antibacterial agents Antistatic agents Ceramics Coating materials Deodorants Fungicides Insecticides (manufacture of coating materials having far-IR emission, antibacterial, antifungal, deodorant, insecticidal properties, and antistatic effects) |
| IT | | Serpentine-group minerals RL: NUU (Other use, unclassified); USES (Uses) (manufacture of coating materials having far-IR emission, antibacterial, antifungal, deodorant, insecticidal properties, and antistatic effects) |
| IT | | 1305-78-8, Calcium oxide, uses 1309-48-4, Magnesia, uses 1314-13-2, Zinc oxide, uses 7440-32-6, Titanium, uses 7440-44-0, Carbon, uses 7631-86-9, Silica, uses RL: NUU (Other use, unclassified); USES (Uses) (manufacture of coating materials having far-IR emission, antibacterial, antifungal, deodorant, insecticidal properties, and antistatic effects) |
| IT | | 1305-78-8, Calcium oxide, uses 1309-48-4, Magnesia, uses 7440-44-0, Carbon, uses 7631-86-9, Silica, uses RL: NUU (Other use, unclassified); USES (Uses) (manufacture of coating materials having far-IR emission, antibacterial, antifungal, deodorant, insecticidal properties, and antistatic effects) |
| RN | | 1305-78-8 HCAPLUS |
| CN | | Calcium oxide (CaO) (9CI) (CA INDEX NAME) |

Ca=O

RN 1309-48-4 HCAPLUS
 CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

Mg=O

RN 7440-44-0 HCAPLUS
CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

C

RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 18 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:724093 HCAPLUS

DN 130:42076

ED Entered STN: 16 Nov 1998

TI Ceramic **far-infrared radiators** and their
manufacture

IN Masuda, Toshio

PA Life field Sogo Kenkyusho K. K., Japan

SO Jpn. Kokai Tokyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C04B035-18

ICS A61N005-06; C04B033-13

CC 57-2 (**Ceramics**)

Section cross-reference(s): 73

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 10297961 | A2 | 19981110 | JP 1997-110865 | 19970428 <-- |
| PRAI | JP 1997-110865 | | 19970428 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------|
| JP 10297961 | ICM | C04B035-18 |
| | ICS | A61N005-06; C04B033-13 |

AB The **radiators** contain SiO₂ 55-70, Al oxide 20-30, magnesia 0.5-2, Fe oxide 1-3, Ti oxide 0.5-2, Cu oxide 0.5-3, Ca oxide 1-4, Na oxide 1-3, and K oxide 1-4 weight%. The manufacturing method involves the following steps: (1) mixing a powdered composition containing clay 40-60, natural

zeolite 20-40, pumice 5-15, sawdust 2-10, graphite 1-5, cristobalite 2-10, and Cu powders 0.5-3 weight%, (2) kneading the obtained mixture with H₂O, and (3) molding the kneaded mixture and sintering ≥1 time at 1100-1600°. The obtained ceramics having high IR **radiation** rate can be manufactured at a low cost.

ST silica alumina ceramic **far IR radiator**

IT **IR radiation**

(**far-IR**; manufacture of silica-alumina-based ceramics as **far-IR radiators** at low cost)

IT Ceramics

Radiators

Sawdust

(manufacture of silica-alumina-based ceramics as **far-IR radiators** at low cost)

IT Clays, processes

Pumice

Zeolite-group minerals

RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (manufacture of silica-alumina-based ceramics as **far-IR radiators** at low cost)

IT 7440-50-8, Copper, processes 7782-42-5, Graphite, processes 14464-46-1, Cristobalite
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (manufacture of silica-alumina-based ceramics as **far-IR radiators** at low cost)

IT 216588-59-9P
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (manufacture of silica-alumina-based ceramics as **far-IR radiators** at low cost)

IT 1305-78-8, Calcium oxide, uses 1309-48-4, Magnesia, uses 1313-59-3, Sodium oxide, uses 1332-37-2, Iron oxide, uses 1344-28-1, Alumina, uses 1344-70-3, Copper oxide 7631-86-9, Silica, uses 12136-45-7, Potassium oxide, uses 13463-67-7, Titania, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (manufacture of silica-alumina-based ceramics as **far-IR radiators** at low cost)

IT 7440-50-8, Copper, processes
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (manufacture of silica-alumina-based ceramics as **far-IR radiators** at low cost)

RN 7440-50-8 HCAPLUS
 CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

IT 1305-78-8, Calcium oxide, uses 1309-48-4, Magnesia, uses 1313-59-3, Sodium oxide, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 12136-45-7, Potassium oxide, uses 13463-67-7, Titania, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (manufacture of silica-alumina-based ceramics as **far-IR radiators** at low cost)

RN 1305-78-8 HCAPLUS
 CN Calcium oxide (CaO) (9CI) (CA INDEX NAME)

Ca=O

RN 1309-48-4 HCAPLUS
 CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

Mg=O

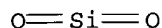
RN 1313-59-3 HCAPLUS
 CN Sodium oxide (Na2O) (9CI) (CA INDEX NAME)

Na-O-Na

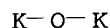
RN 1344-28-1 HCAPLUS
 CN Aluminum oxide (Al2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

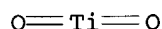
RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 12136-45-7 HCAPLUS
 CN Potassium oxide (K2O) (8CI, 9CI) (CA INDEX NAME)



RN 13463-67-7 HCAPLUS
 CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



L104 ANSWER 19 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1998:436006 HCAPLUS
 DN 129:96331
 ED Entered STN: 15 Jul 1998
 TI Manufacture of antimicrobial deodorizing insect-repellent polyurethane foams having good **far infrared radiation** properties
 IN Maeda, Nobuhide
 PA Ohara Sanwa K. K., Japan
 SO Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C08J009-14
 ICS C08J003-20; C08K003-00; C08K003-08; C08K003-10; C08L075-04
 CC 38-2 (Plastics Fabrication and Uses)
 Section cross-reference(s): 57
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 10182871 | A2 | 19980707 | JP 1996-355579 | 19961224 <-- |
| | JP 2873215 | B2 | 19990324 | | |
| PRAI | JP 1996-355579 | | 19961224 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|--|
| JP 10182871 | ICM | C08J009-14 |
| | ICS | C08J003-20; C08K003-00; C08K003-08; C08K003-10; C08L075-04 |

AB Title polyurethane foams are manufactured by adding composite ceramics selected from (a) main components comprising amphibolite (diameter $\leq 74 \mu\text{m}$) 20-30, MgO 20-30, and SiO2 20-30% and 20-30% Ti or Zn as assistants, (b) main components comprising Ti (diameter $\leq 74 \mu\text{m}$) 20-30, cristobalite 20-30, and serpentine 20-30% and 20-30% Zn as assistants, (c) main components comprising amphibolite (diameter $\leq 74 \mu\text{m}$) 20-30, MgO 40-60, and Ti 10-15% and 10-15% Zn as assistants, (d) main components comprising MgO (diameter $\leq 74 \mu\text{m}$) 20-30, SiO2 20-30, and Ti 20-30%

and 20-30% Zn as assistants, (e) main components comprising SiO₂ (diameter ≤74 μm) 10-15, cristobalite 20-30, and serpentine 40-60% and 10-15% Ti as assistants, and (f) main components comprising amphibolite (diameter ≤74 μm) 20-30, cristobalite 20-30, and serpentine 20-30% and 20-30% Ti as assistants during mixing process of raw materials, blending, and foaming the mixts.

- ST amphibolite silica polyurethane foam manuf antimicrobial; magnesia serpentine titanium polyurethane foam deodorizing; cristobalite zinc polyurethane foam insect repellent; polyurethane foam manuf **far**
IR radiation
- IT Polyurethanes, uses
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(foam; manufacture of antimicrobial deodorizing insect-repellent polyurethane foams)
- IT Antibacterial agents
Ceramics
Deodorants
Fungicides
Insect repellents
(manufacture of antimicrobial deodorizing insect-repellent polyurethane foams)
- IT Amphibolite
Serpentine-group minerals
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(manufacture of antimicrobial deodorizing insect-repellent polyurethane foams)
- IT 1309-48-4, Magnesia, uses 7440-32-6, Titanium, uses 7440-66-6, Zinc, uses 7631-86-9, Silica, uses 14464-46-1, Cristobalite
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(manufacture of antimicrobial deodorizing insect-repellent polyurethane foams)
- IT 1309-48-4, Magnesia, uses 7440-66-6, Zinc, uses 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(manufacture of antimicrobial deodorizing insect-repellent polyurethane foams)
- RN 1309-48-4 HCAPLUS
CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

Mg=O

RN 7440-66-6 HCAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 20 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1998:221440 HCAPLUS
 DN 128:215067
 ED Entered STN: 22 Apr 1998
 TI Multipurpose mountain flour capable of release **far**
infrared and anion, and manufacturing method thereof
 IN Park, Jong-Chul
 PA Park, Jong-Chul, S. Korea
 SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 10 pp.
 CODEN: CNXXEV
 DT Patent
 LA Chinese
 IC ICM C04B035-01
 CC 8-9 (**Radiation** Biochemistry)
 Section cross-reference(s): 17, 64

FAN.CNT 1

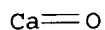
| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|--------------|
| PI | CN 1144207 | A | 19970305 | CN 1995-118226 | 19951020 <-- |
| | CN 1077090 | B | 20020102 | | |
| PRAI | KR 1995-26761 | A | 19950826 | <-- | |

CLASS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|----|---|-------|------------------------------------|
| | CN 1144207 | ICM | C04B035-01 |
| AB | Multipurpose mountain flour capable of release far IR and anion, and manufacturing method thereof. | | |
| ST | mountain flour IR anion prepn bioceramic | | |
| IT | Ceramics (biocompatible; multipurpose mountain flour capable of release far IR and anion, and manufacturing method thereof) | | |
| IT | Anions IR radiation (multipurpose mountain flour capable of release far IR and anion, and manufacturing method thereof) | | |
| IT | 1305-78-8, Calcium oxide, analysis 1309-37-1, Ferric oxide, analysis 1309-48-4, Magnesium oxide, analysis 1313-59-3, Sodium oxide, analysis 1314-56-3, Phosphorus pentoxide, analysis 1344-28-1, Aluminum oxide, analysis 1344-43-0, Manganese oxide, analysis 1345-25-1, Ferrous oxide, analysis 7440-56-4, Germanium, analysis 7631-86-9 , Silicon dioxide, analysis 7782-49-2, Selenium, analysis 12136-45-7, Potassium oxide, analysis 13463-67-7, Titanium oxide, analysis RL: ANT (Analyte); ANST (Analytical study) (multipurpose mountain flour capable of release far IR and anion, and manufacturing method thereof) | | |
| IT | 12003-54-2P, Jadeite 12174-03-7P, Nephrite RL: BUU (Biological use, unclassified); PNU (Preparation, unclassified); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (multipurpose mountain flour capable of release far IR and anion, and manufacturing method thereof) | | |
| IT | 1305-78-8, Calcium oxide, analysis 1309-37-1, Ferric oxide, analysis 1309-48-4, Magnesium oxide, analysis 1313-59-3, Sodium oxide, analysis 1314-56-3, Phosphorus pentoxide, analysis 1344-28-1, Aluminum oxide, analysis 1344-43-0, Manganese oxide, analysis 1345-25-1, Ferrous oxide, analysis 7440-56-4, Germanium, analysis 7631-86-9 , Silicon dioxide, analysis 12136-45-7, Potassium oxide, analysis 13463-67-7, Titanium oxide, analysis RL: ANT (Analyte); ANST (Analytical study) (multipurpose mountain flour capable of release far | | |

IR and anion, and manufacturing method thereof)

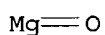
RN 1305-78-8 HCAPLUS
CN Calcium oxide (CaO) (9CI) (CA INDEX NAME)



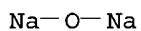
RN 1309-37-1 HCAPLUS
CN Iron oxide (Fe₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1309-48-4 HCAPLUS
CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)



RN 1313-59-3 HCAPLUS
CN Sodium oxide (Na₂O) (9CI) (CA INDEX NAME)



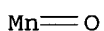
RN 1314-56-3 HCAPLUS
CN Phosphorus oxide (P₂O₅) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

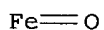
RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1344-43-0 HCAPLUS
CN Manganese oxide (MnO) (8CI, 9CI) (CA INDEX NAME)



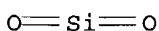
RN 1345-25-1 HCAPLUS
CN Iron oxide (FeO) (8CI, 9CI) (CA INDEX NAME)



RN 7440-56-4 HCAPLUS
CN Germanium (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 12136-45-7 HCAPLUS

CN Potassium oxide (K2O) (8CI, 9CI) (CA INDEX NAME)

K—O—K

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

L104 ANSWER 21 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1997:692710 HCAPLUS

DN 127:295559

ED Entered STN: 03 Nov 1997

TI High-Temperature Conversion of CH4 to C2-Hydrocarbons and H2 Using a Redox System of Metal Oxide

AU Kodama, T.; Shimizu, T.; Aoki, A.; Kitayama, Y.

CS Departments of Chemistry and Chemical Engineering, Faculty of Engineering, Niigata University, Niigata, 950-21, Japan

SO Energy & Fuels (1997), 11(6), 1257-1263

CODEN: ENFUEM; ISSN: 0887-0624

PB American Chemical Society

DT Journal

LA English

CC 51-5 (Fossil Fuels, Derivatives, and Related Products)

Section cross-reference(s): 35, 45, 52, 67

AB A high-temperature thermochem. process using a two-step redox system of metal oxide was proposed for converting CH4 to C2-hydrocarbons (C2s) and H2. In the first high-temperature, an endothermic step, methane was reacted with metal oxide to produce C2s and the reduced metal oxide. The reduced metal oxide was then reoxidized with water to generate H2 in a low-temperature second step. A thermodyn. anal. showed that redox systems of Fe3O4/FeO, SnO2/SnO, and WO3/WO2 were promising for the two-step process. In particular, the redox system of Fe3O4 was exptl. examined. Highly selective conversion could be repeated with SiO2-supported Fe3O4 (Fe3O4/SiO2) to produce C2s (mainly C2H4) and H2 alternately in the different steps at 1123-1173 K; evolution of COx and deposition of bulk carbon were scarcely observed. Exptl. studies using unsupported Fe3O4 showed that the formation of C2s in the first high-temperature step occurred favorably for the reduction from Fe3O4 to FeO in comparison to that from FeO to α -FeO. The two-step process using Fe3O4/SiO2 was superior to the production efficiencies of C2s and H2 obtained by the direct single-step conversion of CH4, which offers the efficient conversion of natural gas utilizing high-temperature heat such as concentrated

solar

radiation.

ST redox coupling methane C2 hydrocarbon; natural gas redox coupling C2; thermochem redox cycle methane C2 hydrocarbon; iron oxide redox couple methane C2; free energy methane redox coupling C2

IT Hydrocarbons, preparation

RL: FMU (Formation, unclassified); IMF (Industrial manufacture); FORM (Formation, nonpreparative); PREP (Preparation)

(C>1; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)

IT Hydrocarbons, preparation

RL: FMU (Formation, unclassified); IMF (Industrial manufacture); FORM (Formation, nonpreparative); PREP (Preparation)

(C2; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)

IT Solar **radiation**

- Solar radiation**
(IR, energy source; for high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT Redox agents
(couples; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT Redox reaction catalysts
(high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT Natural gas, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT Redox reaction
(high-temperature; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT Free energy
(of high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT Coupling reaction
Coupling reaction catalysts
(redox; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT **IR radiation**
IR radiation
(solar, energy source; for high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 630-08-0, Carbon monoxide, formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(energy source; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- and
- IT 1333-74-0P, Hydrogen, preparation
RL: BYP (Byproduct); IMF (Industrial manufacture); PREP (Preparation)
(formation of; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 124-38-9, Carbon dioxide, formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 74-84-0P, Ethane, preparation 74-85-1P, Ethylene, preparation
RL: FMU (Formation, unclassified); IMF (Industrial manufacture); FORM (Formation, nonpreparative); PREP (Preparation)
(high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 74-82-8, Methane, reactions
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 7440-47-3, Chromium, uses
RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(redox systems, chromium oxide (Cr2O5)-; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 1308-38-9, Chromium oxide (Cr2O3), uses
RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(redox systems, chromium-; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)

- redox couples)
- IT 7439-89-6, Iron, uses
RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(redox systems, iron oxide (FeO)-iron oxide (Fe3O4)-; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 1317-61-9, Iron oxide (Fe3O4), uses
RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(redox systems, iron-iron oxide (FeO)-; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 1345-25-1, Ferrous oxide, uses
RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(redox systems, iron-iron oxide (Fe3O4)-; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 1313-96-8, Niobium oxide (Nb2O5)
RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(redox systems, niobium oxide (NbO2)-; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 12034-59-2, Niobium oxide (NbO2)
RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(redox systems, niobium oxide (Nb2O5)-; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 7440-25-7, Tantalum, uses
RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(redox systems, tantalum oxide (Ta2O5)-; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 1314-61-0, Tantalum oxide (Ta2O5)
RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(redox systems, tantalum-; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 1344-54-3, Titanium oxide (Ti2O3)
RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(redox systems, titanium oxide (TiO2)-; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 13463-67-7, Titanium dioxide, uses
RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(redox systems, titanium oxide (Ti2O3)-; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 7631-86-9, Silica, uses
RL: CAT (Catalyst use); USES (Uses)
(support; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)
- IT 7440-47-3, Chromium, uses
RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)

(redox systems, chromium oxide (Cr2O5)-; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)

RN 7440-47-3 HCAPLUS

CN Chromium (8CI, 9CI) (CA INDEX NAME)

Cr

IT 1308-38-9, Chromium oxide (Cr2O3), uses

RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)

(redox systems, chromium-; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)

RN 1308-38-9 HCAPLUS

CN Chromium oxide (Cr2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 1345-25-1, Ferrous oxide, uses

RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)

(redox systems, iron-iron oxide (Fe3O4)-; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)

RN 1345-25-1 HCAPLUS

CN Iron oxide (FeO) (8CI, 9CI) (CA INDEX NAME)

Fe=O

IT 13463-67-7, Titanium dioxide, uses

RL: CAT (Catalyst use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)

(redox systems, titanium oxide (Ti2O3)-; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT 7631-86-9, Silica, uses

RL: CAT (Catalyst use); USES (Uses)

(support; high-temperature conversion of methane to C2-hydrocarbons and hydrogen over metal oxide-metal or metal oxide redox couples)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 22 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1997:309741 HCAPLUS

DN 126:281728

ED Entered STN: 15 May 1997

TI Silica-based refractory materials having high emissivity of far-

IR
 IN Yamanaka, Isao
 PA Yamanaka Isao, Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C04B035-18
 ICS C04B035-00; F23G005-44; F23M005-00; F27D001-00
 CC 57-6 (Ceramics)
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 09059056 | A2 | 19970304 | JP 1995-233239 | 19950819 <-- |
| PRAI | JP 1995-233239 | | 19950819 | <-- | |

CLASS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|--|-------------|-------|--|
| | JP 09059056 | ICM | C04B035-18 |
| | | ICS | C04B035-00; F23G005-44; F23M005-00; F27D001-00 |

AB The refractory materials comprise SiO₂-based silica black thermally radiating far-IR, Al₂O₃- and SiO₂-based materials thermally radiating far-IR, and zirconia containing Zr and SiO₂. The refractory materials have high heat resistance and are used for blast furnaces and incinerators.

ST silica alumina zirconia refractory material; IR emission refractory material

IT Refractories
 (silica-based refractory materials having high emissivity of far-IR)

IT 1314-23-4, Zirconia, uses 1344-28-1, Alumina, uses 7440-67-7, Zirconium, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (in silica-based refractory materials having high emissivity of far-IR)

IT 7631-86-9, Silica, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (silica-based refractory materials having high emissivity of far-IR)

IT 1344-28-1, Alumina, uses 7440-67-7, Zirconium, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (in silica-based refractory materials having high emissivity of far-IR)

RN 1344-28-1 HCAPLUS
 CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7440-67-7 HCAPLUS
 CN Zirconium (8CI, 9CI) (CA INDEX NAME)

Zr

IT 7631-86-9, Silica, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (silica-based refractory materials having high emissivity of far-IR)

RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 23 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1997:200889 HCAPLUS
 DN 126:284840
 ED Entered STN: 27 Mar 1997
 TI Supercontinuum self-Q-switched **ytterbium** fiber laser
 AU Chernikov, S. V.; Zhu, Y.; Taylor, J. R.; Gapontsev, V. P.
 CS Femtosecond Optics Group, Department of Physics, Imperial College, London,
 SW7 2BZ, UK
 SO Optics Letters (1997), 22(5), 298-300
 CODEN: OPLEDP; ISSN: 0146-9592
 PB Optical Society of America
 DT Journal
 LA English
 CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)
 AB The authors have discovered a new mechanism for passive Q switching of
 fiber lasers. 10-KW peak power pulses with .apprx.2-ns pulse widths are
 reported from a diode-pumped **ytterbium**-doped fiber laser. The
 laser generates a high-brightness Raman-dominated supercontinuum spectrum
 covering the complete window of transparency of **silica** fiber in
 the IR from 1.06 to 2.3 μ m.
 ST self Q switched **ytterbium** fiber laser; diode pumped
ytterbium silica fiber laser
 IT Solid state lasers
 (IR, fiber; supercontinuum self-Q-switched **ytterbium** fiber
 laser)
 IT IR lasers
 (solid-state, fiber; supercontinuum self-Q-switched **ytterbium**
 fiber laser)
 IT IR laser radiation
 Raman optical activity
 (supercontinuum self-Q-switched **ytterbium** fiber laser)
 IT 7440-32-6, Titanium, properties 7440-64-4, **Ytterbium**,
 properties
 RL: DEV (Device component use); MOA (Modifier or additive use);
 PRP (Properties); USES (Uses)
 (supercontinuum self-Q-switched **ytterbium** fiber laser)
 IT 1344-28-1, Aluminum oxide (Al2O3), properties 7631-86-9,
Silica, properties
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (supercontinuum self-Q-switched **ytterbium** fiber laser)
 IT 7440-64-4, **Ytterbium**, properties
 RL: DEV (Device component use); MOA (Modifier or additive use);
 PRP (Properties); USES (Uses)
 (supercontinuum self-Q-switched **ytterbium** fiber laser)
 RN 7440-64-4 HCAPLUS
 CN **Ytterbium** (8CI, 9CI) (CA INDEX NAME)

Yb

IT 1344-28-1, Aluminum oxide (Al2O3), properties 7631-86-9,
Silica, properties
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (supercontinuum self-Q-switched **ytterbium** fiber laser)
 RN 1344-28-1 HCAPLUS
 CN Aluminum oxide (Al2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 24 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1997:51673 HCAPLUS

DN 126:191958

ED Entered STN: 24 Jan 1997

TI Development and evaluation of first wall materials for the National Ignition Facility

AU Burnham, Alan K.; Tobin, Michael T.; Anderson, Andrew T.; Honea, Eric; Skulina, Kenneth M.; Milam, David; Evans, Mark; Rainer, Frank; Gerassimenko, Michel

CS Lawrence Livermore Natl. Lab., Livermore, CA, 94551, USA

SO Fusion Technology (1996), 30(3, Pt. 2A), 730-735

CODEN: FUSTE8; ISSN: 0748-1896

PB American Nuclear Society

DT Journal

LA English

CC 71-2 (Nuclear Technology)

Section cross-reference(s): 57

AB Several low-Z refractory materials are evaluated for use as the NIF first wall in terms of their cost, level of vacuum outgassing, and ability to survive laser light, target emissions and debris and rigorous decontamination. The best performers contain B, C, or both, with B4C being the best overall. It appears possible at this time that plasma-sprayed B4C can be fabricated with low enough porosity and cost to be preferred over hot-pressed B4C, the conservative choice.

ST laser inertial fusion reactor first wall; refractory first wall National Ignition Facility; coating refractory first wall fusion reactor

IT Surface damage

Surface damage

(crazing; development and evaluation of first wall materials for the National Ignition Facility)

IT Coating materials

Fusion reactor first walls

Laser ablation

Porosity

Spalling

Surface damage

Surface melting

(development and evaluation of first wall materials for the National Ignition Facility)

IT Cleaning

X-ray

(development and evaluation of first wall materials for the National Ignition Facility in relation to)

IT Abrasion

(development and evaluation of first wall materials for the National Ignition Facility in view of CO2 cleaning)

IT Sintering

(hot pressing; development and evaluation of first wall materials for the National Ignition Facility)

IT Inertial-confinement fusion reactors

(laser-driven; development and evaluation of first wall materials for the National Ignition Facility)

IT Inertial-confinement fusion reactor plasmas

(laser-induced; development and evaluation of first wall materials for the National Ignition Facility)

IT **IR laser radiation**
(near-IR; development and evaluation of first wall materials for the National Ignition Facility in relation to)

IT **Laser radiation**
(near-UV; development and evaluation of first wall materials for the National Ignition Facility in relation to)

IT **Coating process**
(plasma spraying; development and evaluation of first wall materials for the National Ignition Facility)

IT **Crazing**
Crazing
(surface; development and evaluation of first wall materials for the National Ignition Facility)

IT **Desorption**
(vacuum; development and evaluation of first wall materials for the National Ignition Facility)

IT 124-38-9, Carbon dioxide, uses
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(cleaning; development and evaluation of first wall materials for the National Ignition Facility in relation to)

IT 409-21-2, Silicon monocarbide, uses 1344-28-1, Aluminum oxide (Al₂O₃), uses 7440-42-8, Boron, uses 7440-44-0, Carbon, uses 7631-86-9, Silica, uses 12033-89-5, Silicon nitride (Si₃N₄), uses 12069-32-8, Boron carbide (B₄C) 99284-02-3
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(development and evaluation of first wall materials for the National Ignition Facility)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anderson, A; This conference, paper #06p 02 1996
(2) Anon; National Ignition Facility Conceptual Design Report, Volume 3: Conceptual Design 1994, V3(UCRL-PROP-117093, NIF-LLNL-94-113, L-16973-1), P5
(3) Reitz, T; This conference, paper #23 1996, P27
(4) Seals, R; This conference, paper #13.06 1996
(5) Streckert, H; This conference, paper #06p 05 1996
(6) Tobin, M; This conference, paper #06.05 1996
(7) Tobin, M; This conference, paper #06p 07 1996

IT 1344-28-1, Aluminum oxide (Al₂O₃), uses 7440-44-0, Carbon, uses 7631-86-9, Silica, uses
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(development and evaluation of first wall materials for the National Ignition Facility)

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7440-44-0 HCAPLUS

CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

C

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 25 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1997:18415 HCAPLUS

DN 126:50560

ED Entered STN: 13 Jan 1997

TI Photolysis catalysts containing **titanium oxide** and their manufacture for deodorization of air

IN Shibahara, Kazuo; Nakano, Hideyuki; Takano, Toshikatsu

PA Nippon Insulation Kk, Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B01J035-02

ICS B01J021-06; B01J033-00

CC 59-6 (Air Pollution and Industrial Hygiene)

Section cross-reference(s): 58, 67

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---------------|------|----------|-----------------|--------------|
| PI | JP 08243402 | A2 | 19960924 | JP 1995-48703 | 19950308 <-- |
| PRAI | JP 1995-48703 | | 19950308 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------|
| JP 08243402 | ICM | B01J035-02 |
| | ICS | B01J021-06; B01J033-00 |

AB The catalysts comprise **TiO₂** and oxidation accelerators, preferably simple substances, oxides, hydroxides, halides, and/or salts of transition, noble, and rare earth metals, e.g., **Ni, Cr**, **Fe, Zn, Ti, Mn, Co, Mo, V, Sr, W, Pd, Au, Ag, Pt, La, Ce, Pr, Nd, Dy, Ho, Er, and Lu**, on surface layers of inorg. curing materials. Preferably, the inorg. cured materials contain cement, synthetic Ca silicate, synthetic Mg silicate, and/or Mg carbonate. Optionally, surfaces of the catalysts have surface protective layers, preferably containing inorg. oxides, e.g., **SiO₂, Al₂O₃, Sb₂O₃, ZrO₂, TiO₂, SnO₂, Fe₂O₃, CeO₂, WO₃, and/or MoO₃**, or fluororesins and/or silicone resins. The process comprises spreading **TiO₂** and oxidation accelerator powders on surfaces of inorg. moldings before curing and burying the powders in the moldings by pressing. The catalysts are used for air deodorants in houses, offices, factories, etc., and building materials.

ST photolysis catalyst **titanium oxide** oxidn accelerator;
air deodorant photolysis catalyst **titania**; building material
photolysis catalyst air deodorization

IT Air purification
(deodorization; photolysis catalysts containing **TiO₂** and oxidation accelerators on inorg. substrates and their manufacture for air deodorization)

IT Rare earth compounds
Transition metal compounds
Transition metal compounds

RL: CAT (Catalyst use); USES (Uses)

(hydroxides, oxidation accelerators; photolysis catalysts containing **TiO₂** and oxidation accelerators on inorg. substrates and their manufacture for air deodorization)

IT Rare earth halides
Rare earth oxides
Rare earth salts

Transition metal halides
 Transition metal oxides
 Transition metal salts

RL: CAT (Catalyst use); USES (Uses)

(oxidation accelerators; photolysis catalysts containing **TiO2** and oxidation accelerators on inorg. substrates and their manufacture for air deodorization)

IT Deodorants

Photolysis catalysts

(photolysis catalysts containing **TiO2** and oxidation accelerators on inorg. substrates and their manufacture for air deodorization)

IT Cement (construction material)

RL: CAT (Catalyst use); USES (Uses)

(portland, inorg. curing materials; photolysis catalysts containing **TiO2** and oxidation accelerators on inorg. substrates and their manufacture for air deodorization)

IT Fluoropolymers, uses

Polysiloxanes, uses

RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)

(surface protective layers for catalysts; photolysis catalysts containing **TiO2** and oxidation accelerators on inorg. substrates and their manufacture for air deodorization)

IT Hydroxides (inorganic)

Hydroxides (inorganic)

RL: CAT (Catalyst use); USES (Uses)

(transition metal, oxidation accelerators; photolysis catalysts containing **TiO2** and oxidation accelerators on inorg. substrates and their manufacture for air deodorization)

IT 546-93-0, Magnesium carbonate 1343-88-0, Magnesium silicate

RL: CAT (Catalyst use); USES (Uses)

(inorg. curing materials; photolysis catalysts containing **TiO2** and oxidation accelerators on inorg. substrates and their manufacture for air deodorization)

IT 1344-95-2P, Calcium silicate

RL: CAT (Catalyst use); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(inorg. curing materials; photolysis catalysts containing **TiO2** and oxidation accelerators on inorg. substrates and their manufacture for air deodorization)

IT 26499-65-0, Plaster of paris

RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)

(inorg. curing materials; photolysis catalysts containing **TiO2** and oxidation accelerators on inorg. substrates and their manufacture for air deodorization)

IT 7429-91-6, Dysprosium, uses 7439-89-6, Iron, uses 7439-91-0,

Lanthanum, uses 7439-94-3, Lutetium, uses 7439-96-5,

Manganese, uses 7439-98-7, Molybdenum, uses 7440-00-8,

Neodymium, uses 7440-02-0, Nickel, uses

7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-10-0,

Praseodymium, uses 7440-22-4, Silver, uses 7440-24-6,

Strontium, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten,

uses 7440-45-1, Cerium, uses 7440-47-3,

Chromium, uses 7440-48-4, Cobalt, uses

7440-52-0, Erbium, uses 7440-57-5, Gold, uses 7440-60-0, Holmium, uses

7440-62-2, Vanadium, uses 7440-66-6, Zinc, uses

7761-88-8, Silver nitrate, uses 10028-22-5

RL: CAT (Catalyst use); USES (Uses)

(oxidation accelerators; photolysis catalysts containing **TiO2** and

oxidation accelerators on inorg. substrates and their manufacture for air deodorization)

IT 13463-67-7, **Titanium dioxide**, uses

RL: CAT (Catalyst use); USES (Uses)

(photolysis catalysts containing **TiO2** and oxidation accelerators on inorg. substrates and their manufacture for air deodorization)

IT 75-08-1, **Ethanethiol**

RL: REM (Removal or disposal); PROC (Process)

(photolysis catalysts containing **TiO2** and oxidation accelerators on inorg. substrates and their manufacture for air deodorization)

IT 1306-38-3, **Cerium dioxide**, uses 1309-37-1, **Iron**

trioxide, uses 1309-64-4, **Antimony oxide** (Sb2O3), uses 1313-27-5,

Molybdenum oxide (MoO3), uses 1314-23-4, **Zirconium oxide**

(ZrO2), uses 1314-35-8, **Tungsten oxide** (WO3), uses 1344-28-1,

Aluminum oxide (Al2O3), uses 7631-86-9

, **Silica**, uses 18282-10-5, **Tin oxide** (SnO2)

RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES

(Uses)

(surface protective layers for catalysts; photolysis catalysts containing **TiO2** and oxidation accelerators on inorg. substrates and their manufacture for air deodorization)

IT 7439-91-0, **Lanthanum**, uses 7440-00-8,

Neodymium, uses 7440-02-0, **Nickel**, uses

7440-24-6, **Strontium**, uses 7440-45-1,

Cerium, uses 7440-47-3, **Chromium**, uses

7440-48-4, **Cobalt**, uses 7440-66-6,

Zinc, uses

RL: CAT (Catalyst use); USES (Uses)

(oxidation accelerators; photolysis catalysts containing **TiO2** and oxidation accelerators on inorg. substrates and their manufacture for air deodorization)

RN 7439-91-0 HCAPLUS

CN Lanthanum (8CI, 9CI) (CA INDEX NAME)

La

RN 7440-00-8 HCAPLUS

CN Neodymium (8CI, 9CI) (CA INDEX NAME)

Nd

RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

RN 7440-24-6 HCAPLUS

CN Strontium (8CI, 9CI) (CA INDEX NAME)

Sr

RN 7440-45-1 HCAPLUS

CN Cerium (8CI, 9CI) (CA INDEX NAME)

Ce

RN 7440-47-3 HCAPLUS
CN Chromium (8CI, 9CI) (CA INDEX NAME)

Cr

RN 7440-48-4 HCAPLUS
CN Cobalt (8CI, 9CI) (CA INDEX NAME)

Co

RN 7440-66-6 HCAPLUS
CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 13463-67-7, Titanium dioxide, uses
RL: CAT (Catalyst use); USES (Uses)
(photolysis catalysts containing TiO₂ and oxidation accelerators on
inorg. substrates and their manufacture for air deodorization)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT 1309-37-1, Iron trioxide, uses 1344-28-1,
Aluminum oxide (Al₂O₃), uses 7631-86-9
, Silica, uses
RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES
(Uses)
(surface protective layers for catalysts; photolysis catalysts containing
TiO₂ and oxidation accelerators on inorg. substrates and their
manufacture for air deodorization)
RN 1309-37-1 HCAPLUS
CN Iron oxide (Fe₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 26 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:591146 HCAPLUS
DN 125:288131
ED Entered STN: 04 Oct 1996

- TI Diode-pumped passively mode-locked 1.3- μ m Nd:YVO4 and Nd:YLF lasers by use of semiconductor saturable absorbers
- AU Fluck, R.; Zhang, G.; Keller, U.; Weingarten, K. J.; Moser, M.
- CS Institute Quantum Electronics, Swiss Federal Institute Technology, Zurich, CH-8093, Switz.
- SO Optics Letters (1996), 21(17), 1378-1380
CODEN: OPLEDP; ISSN: 0146-9592
- PB Optical Society of America
- DT Journal
- LA English
- CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- AB The authors report on self-starting passively mode-locked diode-pumped 1.3- μ m lasers obtained using semiconductor saturable absorbers. The authors achieved pulses as short as 4.6 ps in Nd:YVO4 and 5.7 ps in Nd:YLF with average output powers of 50 and 130 mW, resp.
- ST neodymium doped yttrium vanadate laser; yttrium lithium fluoride neodymium doped laser; optical nonlinear saturable absorber pumped laser; gallium indium arsenide saturable absorber laser; mirror laser gallium indium arsenide absorber
- IT Lasers
Optical pumping
(diode-pumped passively mode-locked 1.3- μ m Nd:YVO4 and Nd:YLF lasers using semiconductor saturable absorber)
- IT Optical absorption
(IR, effect of H2O IR optical absorption on output of picosecond pulsed diode-pumped lasers)
- IT Laser radiation
(IR, effect of H2O IR optical absorption on output of picosecond pulsed diode-pumped passively mode-locked lasers)
- IT Mirrors
(laser, diode-pumped lasers using AlAs/GaAs and TiO2/SiO2 Bragg mirrors and InGaAs saturable absorber)
- IT Lasers
(mirrors, diode-pumped lasers using AlAs/GaAs and TiO2/SiO2 Bragg mirrors and InGaAs saturable absorber)
- IT Optical materials
(saturable absorbers, diode-pumped passively mode-locked 1.3- μ m Nd:YVO4 and Nd:YLF lasers using semiconductor saturable absorber)
- IT 1303-00-0, Gallium arsenide (GaAs), uses 22831-42-1, Aluminum arsenide (AlAs)
RL: DEV (Device component use); USES (Uses)
(diode-pumped laser using AlAs/GaAs Bragg mirror and InGaAs saturable absorber)
- IT 106070-25-1, Gallium indium arsenide
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(diode-pumped laser using AlAs/GaAs Bragg mirror and InGaAs saturable absorber)
- IT 7631-86-9, Silica, uses 13463-67-7, Titanium oxide (TiO2), uses
RL: DEV (Device component use); USES (Uses)
(diode-pumped lasers using AlAs/GaAs and TiO2/SiO2 Bragg mirrors and InGaAs saturable absorber)
- IT 13566-12-6, Yttrium vanadate (YVO4) 23108-36-3, YLF
RL: DEV (Device component use); USES (Uses)
(diode-pumped passively mode-locked 1.3- μ m Nd:YVO4 and Nd:YLF lasers using semiconductor saturable absorber)
- IT 7440-00-8, Neodymium, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(diode-pumped passively mode-locked 1.3- μ m Nd:YVO4 and

Nd:YLF lasers using semiconductor saturable absorber)
 IT 7732-18-5, Water, properties
 RL: PRP (Properties)
 (effect of H2O IR optical absorption on output of diode-pumped
 passively mode-locked lasers)
 IT 7631-86-9, Silica, uses 13463-67-7,
Titanium oxide (TiO2), uses
 RL: DEV (Device component use); USES (Uses)
 (diode-pumped lasers using AlAs/GaAs and TiO2/SiO2
 Bragg mirrors and InGaAs saturable absorber)
 RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 13463-67-7 HCAPLUS
 CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT 7440-00-8, Neodymium, uses
 RL: DEV (Device component use); MOA (Modifier or additive use);
 USES (Uses)
 (diode-pumped passively mode-locked 1.3-μm **Nd:YVO4** and
Nd:YLF lasers using semiconductor saturable absorber)
 RN 7440-00-8 HCAPLUS
 CN Neodymium (8CI, 9CI) (CA INDEX NAME)

Nd

L104 ANSWER 27 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1996:237898 HCAPLUS
 DN 124:329586
 ED Entered STN: 23 Apr 1996
 TI THz SIS mixers with normal-metal Al tuning circuits
 AU Bin, M.; Gaidis, M. C.; Zmuidzinas, J.; Phillips, T. G.; Leduc, H. G.
 CS G W Downs Lab. Physics, California Inst. Technol., Pasadena, CA, 91125,
 USA
 SO Superconductor Science & Technology (1996), 9(4A), A136-A139
 CODEN: SUSTEF; ISSN: 0953-2048
 PB Institute of Physics Publishing
 DT Journal
 LA English
 CC 76-4 (Electric Phenomena)
 Section cross-reference(s): 73
 AB Nb-based superconductor-insulator-superconductor (SIS) mixers with Nb
 tuning circuits have demonstrated good results up to the Nb gap frequency.
 Above the gap frequency the performance is expected to degrade quickly
 because RF loss in Nb becomes significant. In this paper we present the
 results of an effort to extend Nb-based SIS mixers to THz frequencies by
 employing lower-loss normal-metal Al wiring and tuning structures. The
 SIS mixer has two Nb/Al-oxide/Nb junctions connected by an Al microstrip
 inductor. The direct detection response of the device was measured by a
 Fourier transform spectrometer. A double-side-band receiver noise temperature
 of 840 K was obtained at 1042 GHz when the device was operated at 2.5 K.
 ST superconductor mixer far IR aluminum niobium

IT Superconductor devices
(terahertz SIS mixers with normal-metal Al tuning circuits)

IT **Infrared radiation**
(far-IR, terahertz SIS mixers with normal-metal Al tuning circuits)

IT 1344-28-1, Alumina, uses 7429-90-5, Aluminum, uses 7440-03-1, Niobium, uses 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(terahertz SIS mixers with normal-metal Al tuning circuits)

IT 1344-28-1, Alumina, uses 7440-03-1, Niobium, uses 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(terahertz SIS mixers with normal-metal Al tuning circuits)

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7440-03-1 HCAPLUS

CN Niobium (8CI, 9CI) (CA INDEX NAME)

Nb

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 28 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1994:314035 HCAPLUS

DN 120:314035

ED Entered STN: 11 Jun 1994

TI Composite of magnet material and **far infrared-radiating** material

IN Furuya, Takashi; Shigemori, Yojiro

PA Daido Steel Co Ltd, Japan; Shigemori Yojiro

SO Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01F001-08

ICS A61N005-06; H01F001-053

CC 77-4 (Magnetic Phenomena)

Section cross-reference(s): 63

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 05347206 | A2 | 19931227 | JP 1992-179366 | 19920613 <-- |
| PRAI | JP 1992-179366 | | 19920613 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------|
| JP 05347206 | ICM | H01F001-08 |
| | ICS | A61N005-06; H01F001-053 |

AB The composite, with maximum energy product (BH) ≥ 3 MOe, comprises a magnet powder and a **far IR-radiating** material powder. The magnet powder may be a quenched microcrystal grain Nd-Fe-B powder. The composite is useful for medical goods.

ST **far IR radiating** magnet composite

IT Magnets
 (composites, with far IR-radiating material)

IT Ceramic materials and wares
 (far IR-radiating, composite with magnet)

IT Medical goods
 (magnet-far IR-radiating composite material)

IT 155142-51-1
 RL: USES (Uses)
 (composite with far IR-radiating material)

IT 409-21-2, Silicon carbide, uses 1309-48-4, Magnesia, uses 1313-59-3, Sodium oxide, uses 1344-28-1, Alumina, uses 1345-25-1, Iron oxide (FeO), uses 7440-44-0, Carbon, uses 7631-86-9, Silica, uses
 RL: USES (Uses)
 (far IR-radiating material from)

IT 1309-48-4, Magnesia, uses 1313-59-3, Sodium oxide, uses 1344-28-1, Alumina, uses 1345-25-1, Iron oxide (FeO), uses 7440-44-0, Carbon, uses 7631-86-9, Silica, uses
 RL: USES (Uses)
 (far IR-radiating material from)

RN 1309-48-4 HCAPLUS
 CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

Mg=O

RN 1313-59-3 HCAPLUS
 CN Sodium oxide (Na₂O) (9CI) (CA INDEX NAME)

Na-O-Na

RN 1344-28-1 HCAPLUS
 CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1345-25-1 HCAPLUS
 CN Iron oxide (FeO) (8CI, 9CI) (CA INDEX NAME)

Fe=O

RN 7440-44-0 HCAPLUS
 CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

C

RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 29 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1994:18756 HCAPLUS
 DN 120:18756
 ED Entered STN: 08 Jan 1994
 TI **Far-infrared** emitting cathode-ray tube
 IN Kim, Heon Soo
 PA Samsung Electron Devices Co., Ltd., S. Korea
 SO Eur. Pat. Appl., 24 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM H01J029-28
 ICS H01J029-18; C09K011-02
 CC 73-11 (**Optical**, Electron, and Mass Spectroscopy and Other
 Related Properties)
 Section cross-reference(s): 8, 74, 76

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|----------|-----------------|--------------|
| PI | EP 543671 | A2 | 19930526 | EP 1992-310644 | 19921120 <-- |
| | EP 543671 | A3 | 19931222 | | |
| | EP 543671 | B1 | 19970502 | | |
| | R: DE, FR, GB, NL | | | | |
| | KR 9500349 | B1 | 19950113 | KR 1991-21294 | 19911126 <-- |
| | JP 06076753 | A2 | 19940318 | JP 1992-330948 | 19921117 <-- |
| | JP 2540002 | B2 | 19961002 | | |
| | CN 1073041 | A | 19930609 | CN 1992-112809 | 19921120 <-- |
| | CN 1046820 | B | 19991124 | | |
| | US 5686781 | A | 19971111 | US 1996-761146 | 19961206 <-- |
| PRAI | KR 1991-20698 | | 19911120 | <-- | |
| | KR 1991-20849 | | 19911121 | <-- | |
| | KR 1991-20891 | | 19911122 | <-- | |
| | KR 1991-21294 | | 19911126 | <-- | |
| | KR 1992-9993 | | 19920609 | <-- | |
| | US 1992-979146 | | 19921119 | <-- | |
| | US 1996-669828 | | 19960626 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|--|------------------------------------|
| EP 543671 | ICM | H01J029-28 |
| | ICS | H01J029-18; C09K011-02 |
| AB | Cathode-ray tubes are described which incorporate far-IR -emitting materials in a layer formed over a black matrix (e.g., on the shadow mask). It is suggested that the far IR radiation emitted by the cathode-ray tubes provided with the materials will have beneficial effects on the uses of the tubes. | |
| ST | health far IR cathode ray tube; far IR emitter cathode ray tube | |
| IT | Health (cathode-ray tubes with far IR -emitting layers in relation to) | |
| IT | Cathode-ray tubes (with far-IR -emitting material layers, health effects in relation to) | |
| IT | 1303-86-2, Boron oxide (B2O3), properties 1304-28-5, Barium oxide, properties 1304-76-3, Bismuth oxide (Bi2O3), properties 1305-78-8, Calcium oxide, properties 1308-06-1, Cobalt oxide (Co3O4) 1308-38-9, Chromium oxide (Cr2O3), properties 1309-37-1, Iron oxide (Fe2O3), properties 1309-48-4, Magnesium oxide (MgO), properties 1313-13-9, Manganese oxide (MnO2), properties 1313-29-7, Molybdenum sesquioxide 1313-59-3, Sodium | |

oxide, properties 1313-99-1, Nickel monoxide, properties 1314-13-2, Zinc oxide (ZnO), properties 1314-23-4, Zirconium dioxide, properties 1314-56-3, Phosphorus pentoxide, properties 1317-38-0, Copper oxide (CuO), properties 1344-28-1, Alumina, properties 7440-44-0, Carbon, properties 7631-86-9, Silica, properties 7782-42-5, Graphite, properties 12057-24-8, Lithium oxide, properties 12136-45-7, Potassium oxide, properties 13463-67-7, Titanium dioxide, properties 151822-92-3

RL: PRP (Properties)

(cathode-ray tubes with layers containing far-IR
-emitting materials containing)

IT 1304-28-5, Barium oxide, properties 1305-78-8, Calcium oxide, properties 1308-38-9, Chromium oxide (Cr2O3), properties 1309-37-1, Iron oxide (Fe2O3), properties 1309-48-4, Magnesium oxide (MgO), properties 1313-59-3, Sodium oxide, properties 1313-99-1, Nickel monoxide, properties 1314-56-3, Phosphorus pentoxide, properties 1344-28-1, Alumina, properties 7440-44-0, Carbon, properties 7631-86-9, Silica, properties 12136-45-7, Potassium oxide, properties 13463-67-7, Titanium dioxide, properties

RL: PRP (Properties)

(cathode-ray tubes with layers containing far-IR
-emitting materials containing)

RN 1304-28-5 HCAPLUS

CN Barium oxide (BaO) (9CI) (CA INDEX NAME)

Ba=O

RN 1305-78-8 HCAPLUS

CN Calcium oxide (CaO) (9CI) (CA INDEX NAME)

Ca=O

RN 1308-38-9 HCAPLUS

CN Chromium oxide (Cr2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1309-37-1 HCAPLUS

CN Iron oxide (Fe2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1309-48-4 HCAPLUS

CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

Mg=O

RN 1313-59-3 HCAPLUS

CN Sodium oxide (Na2O) (9CI) (CA INDEX NAME)

Na-O-Na

RN 1313-99-1 HCAPLUS

CN Nickel oxide (NiO) (8CI, 9CI) (CA INDEX NAME)

Ni=O

RN 1314-56-3 HCAPLUS
CN Phosphorus oxide (P2O5) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7440-44-0 HCAPLUS
CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

C

RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 12136-45-7 HCAPLUS
CN Potassium oxide (K2O) (8CI, 9CI) (CA INDEX NAME)

K-O-K

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

L104 ANSWER 30 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1993:417036 HCAPLUS
DN 119:17036
ED Entered STN: 10 Jul 1993
TI Formation of **far infrared radiation**-emitting
coating by electrodeposition
IN Gao, Xueping; Liu, Fenglan; Xu, Chen; et al.
PA Tianjin Electroplating Factory No. 1, Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 5 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
IC ICM C25D013-00
ICS C25D015-00
CC 72-8 (Electrochemistry)
Section cross-reference(s): 73

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------------|------|----------|-----------------|--------------|
| PI CN 1060317 | A | 19920415 | CN 1991-110801 | 19911121 <-- |
| PRAI CN 1991-110801 | | 19911121 | <-- | |

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

CN 1060317 ICM C25D013-00
ICS C25D015-00

AB A coating, which is durable and capable of emitting **far IR radiation** over the range of 8-15 μm , is electrodeposited on a Ni layer electroplated on a metal or nonmetal substrate in a bath containing a poly(acrylic acid) ammonium salt emulsion, a **far IR radiation**-emitting ceramic material, and an inorg. additive selected from SiC, SiO₂, and Al₂O₃ using the Ni layer as an anode and a stainless steel plate as a cathode at a pH of 7.2-10.0 and 20-28°.

ST **far IR** coating electrodeposition nickel

IT Infrared sources
(far-, ceramic, coatings, formation of, by electrodeposition)

IT 409-21-2, Silicon carbide, uses **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses 9003-03-6, Poly(acrylic acid) ammonium salt
RL: USES (Uses)
(electrolytes containing, for electrodeposition of coatings emitting **far IR radiations**)

IT **7440-02-0**, Nickel, uses
RL: USES (Uses)
(substrates, for electrodeposition of coatings emitting **far IR radiations**)

IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
RL: USES (Uses)
(electrolytes containing, for electrodeposition of coatings emitting **far IR radiations**)

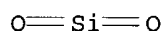
RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT **7440-02-0**, Nickel, uses
RL: USES (Uses)
(substrates, for electrodeposition of coatings emitting **far IR radiations**)

RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

L104 ANSWER 31 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1993:196635 HCAPLUS

DN 118:196635

ED Entered STN: 14 May 1993

TI Manufacture of **far-IR-radiating** ceramic materials

IN Zhang, Huiwen

PA Peop. Rep. China

SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 6 pp.
CODEN: CNXXEV

DT Patent

LA Chinese

IC ICM C04B035-10

ICS H05B003-14

CC 57-2 (Ceramics)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|--------------|-----------------|--------------|
| PI | CN 1064857 | A | 19920930 | CN 1991-101591 | 19910318 <-- |
| PRAI | CN 1991-101591 | | 19910318 <-- | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|-------|------------------------------------|
| CN 1064857 | ICM | C04B035-10 |
| | ICS | H05B003-14 |

AB The ceramics are manufactured by mixing calcined white porcelain powder (SiO₂.Al₂O₃.Na₂O) and Al₂O₃ powder with ≥1 powders selected from SiO₂, MgO, Fe₂O₃, C, and SiC 2-4.5, binder and solidifying agent 0.5-10, and water 5-20%, and molding and drying the mixture to obtain the products. The ceramics are used as a heating and drying apparatus

ST **far IR radiating** ceramic material; alumina
ceramic **far IR radiating**

IT Cement

(aluminous, in alumina-based **far-IR-radiating** ceramics manufacture, for heating and drying apparatus)

IT Aminoplasts

RL: USES (Uses)

(binder, in alumina-based **far-IR-radiating** ceramics manufacture, for heating and drying apparatus)

IT Ceramic materials and wares

(manufacture of alumina-based, **far-IR-radiating**, for heating and drying devices)

IT Heating systems and Heaters

(**far-IR**, alumina-based ceramics for)

IT 9003-01-4, Polyacrylic acid

RL: USES (Uses)

(binder, in alumina-based **far-IR-radiating** ceramics manufacture, for heating and drying apparatus)

IT 1344-28-1, Alumina, uses

RL: USES (Uses)

(ceramics, **far-IR-radiating**, for heating and drying apparatus)

IT 409-21-2, Silicon carbide, uses 1309-37-1, Ferric oxide, uses

1309-48-4, Magnesia, uses 7440-44-0, Carbon, uses

7631-86-9, Silica, uses

RL: USES (Uses)

(in alumina-based **far-IR-radiating** ceramics manufacture, for heating and drying apparatus)

IT 1344-28-1, Alumina, uses

RL: USES (Uses)

(ceramics, **far-IR-radiating**, for heating and drying apparatus)

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 1309-37-1, Ferric oxide, uses 1309-48-4, Magnesia, uses

7440-44-0, Carbon, uses 7631-86-9, Silica, uses

RL: USES (Uses)

(in alumina-based **far-IR-radiating**

ceramics manufacture, for heating and drying apparatus)

RN 1309-37-1 HCAPLUS

CN Iron oxide (Fe₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1309-48-4 HCAPLUS
 CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

Mg=O

RN 7440-44-0 HCAPLUS
 CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

C

RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 32 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1992:493185 HCAPLUS
 DN 117:93185
 ED Entered STN: 05 Sep 1992
 TI Powder and smoke generators for the formation of infrared-masking aerosols
 IN Larmignat, Daniel; Lacreuse, Gilles; Morand, Philippe; Prieur, Christian
 PA Giat Industries, Fr.
 SO PCT Int. Appl., 13 pp.
 CODEN: PIXXD2
 DT Patent
 LA French
 IC ICM C06D003-00
 ICS F41H009-06
 CC 50-3 (Propellants and Explosives)
 Section cross-reference(s): 73

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|--|------|----------|-----------------|--------------|
| PI | WO 9209544 | A1 | 19920611 | WO 1991-FR920 | 19911121 <-- |
| | W: AU, CA, JP, NO, US | | | | |
| | RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE | | | | |
| | FR 2669625 | A1 | 19920529 | FR 1990-14561 | 19901122 <-- |
| | FR 2669625 | B1 | 19940603 | | |
| | ZA 9109125 | A | 19920826 | ZA 1991-9125 | 19911118 <-- |
| | CA 2072979 | AA | 19920523 | CA 1991-2072979 | 19911121 <-- |
| | CA 2072979 | C | 19990420 | | |
| | AU 9190412 | A1 | 19920625 | AU 1991-90412 | 19911121 <-- |
| | AU 645162 | B2 | 19940106 | | |
| | EP 512100 | A1 | 19921111 | EP 1992-900300 | 19911121 <-- |
| | R: DE, GB, IT, NL, SE | | | | |
| | JP 05503685 | T2 | 19930617 | JP 1992-500431 | 19911121 <-- |
| | US 5340395 | A | 19940823 | US 1992-877182 | 19920701 <-- |
| | NO 9202749 | A | 19920710 | NO 1992-2749 | 19920710 <-- |
| | NO 179139 | B | 19960506 | | |
| | NO 179139 | C | 19960814 | | |
| PRAI | FR 1990-14561 | | 19901122 | <-- | |
| | WO 1991-FR920 | | 19911121 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|-------|------------------------------------|
| WO 9209544 | ICM | C06D003-00 |

ICS F41H009-06

- AB The powder particles have been coated with, relative to the powder, an inert material that is resistant to temps. lower or equal to the temperature of the dispersion and does not oxidize in the atmospheric. The smoke generators comprise a suspension of the powder in a liquid carrier that does not oxidize the coating at temps. lower or equal to the temperature of the dispersion. The preferred powder is brass (particle size 1-15 μm), the coating consists of SiO_2 and Al_2O_3 , and the liquid carrier is a low-viscosity oil, e.g., gas oil.
- ST IR masking powder smoke generator; coated brass powder smoke generator; alumina silica coating brass powder; gas oil dispersion powder
- IT Powders
(brass, silica-alumina-coated, dispersions of, in low-viscosity oil, for IR-masking aerosol formation, smoke generators for)
- IT Aerosols
(formation of IR-masking, dispersions of silica-alumina-coated brass powder in gas oil and smoke generators for)
- IT **Infrared radiation**
(masking of, aerosol formation for, dispersions of silica-alumina-coated brass powder in gas oil and smoke generators for)
- IT Hydrocarbon oils
RL: USES (Uses)
(viscosity-low, dispersions in, of silica-alumina-coated brass powder, for IR-masking aerosol formation, smoke generators for)
- IT Pyrotechnic compositions
(smoke-generating, for IR-masking aerosol formation, dispersions of silica-alumina-coated brass powder in gas oil for)
- IT aluminum alloy, base
boron alloy, base
chromium alloy, base
copper alloy, base
iron alloy, base
zinc alloy, base
RL: USES (Uses)
(powders containing, silica-alumina-coated, dispersions of, in low-viscosity oil, for IR-masking aerosol formation, smoke generators for)
- IT **7631-86-9P, Silica, uses**
RL: PREP (Preparation); USES (Uses)
(alumina-containing, brass powder coated with, dispersions of, in low-viscosity oil, for IR-masking aerosol formation, smoke generators for)
- IT 1327-36-2P, Aluminatesilicate
RL: PREP (Preparation)
(brass powder coated with, dispersions of, in low-viscosity oil, for IR-masking aerosol formation, smoke generators for)
- IT 12597-71-6P, Brass, uses
RL: PREP (Preparation); USES (Uses)
(powder, silica-alumina-coated, dispersions of, in low-viscosity oil, for IR-masking aerosol formation, smoke generators for)
- IT 1303-86-2, Boron oxide, uses 1314-13-2, Zinc oxide, uses 1332-37-2, Iron oxide, uses 1344-70-3, Copper oxide 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7440-42-8, Boron, uses 7440-44-0, Carbon, uses 7440-47-3, Chromium, uses 7440-50-8, Copper, uses 7440-66-6, Zinc, uses 9002-84-0, PTFE 11118-57-3, Chromium oxide
RL: USES (Uses)
(powders containing, silica-alumina-coated, dispersions of, in low-viscosity oil, for IR-masking aerosol formation, smoke generators for)
- IT **1344-28-1, Alumina, uses**
RL: USES (Uses)
(silica containing, brass powder coated with, dispersions of, in

low-viscosity oil, for IR-masking aerosol formation, smoke generators for)

IT 7631-86-9P, Silica, uses

RL: PREP (Preparation); USES (Uses)

(alumina-containing, brass powder coated with, dispersions of, in low-viscosity oil, for IR-masking aerosol formation, smoke generators for)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

IT 7440-44-0, Carbon, uses 7440-47-3, Chromium, uses

7440-50-8, Copper, uses 7440-66-6, Zinc, uses

RL: USES (Uses)

(powders containing, silica-alumina-coated, dispersions of, in low-viscosity oil, for IR-masking aerosol formation, smoke generators for)

RN 7440-44-0 HCAPLUS

CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

C

RN 7440-47-3 HCAPLUS

CN Chromium (8CI, 9CI) (CA INDEX NAME)

Cr

RN 7440-50-8 HCAPLUS

CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7440-66-6 HCAPLUS

CN Zinc (7CI, 8CI, 9CI) (CA INDEX NAME)

Zn

IT 1344-28-1, Alumina, uses

RL: USES (Uses)

(silica containing, brass powder coated with, dispersions of, in low-viscosity oil, for IR-masking aerosol formation, smoke generators for)

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L104 ANSWER 33 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1992:199181 HCAPLUS

DN 116:199181

ED Entered STN: 16 May 1992

TI Coating mixtures having improved deodorizing, bactericidal, and antistatic

properties as well as emissivity and oxidation resistance
 IN Yoshizawa, Noriyasu
 PA Ain Corp., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM B32B015-04
 ICA A01N061-00; A23L001-00; A61L009-01; B01D053-34; B05D007-24; B65D081-24;
 C23C004-10; C23C030-00
 CC 56-6 (Nonferrous Metals and Alloys)
 Section cross-reference(s): 57, 73
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 03202343 | A2 | 19910904 | JP 1989-222919 | 19890831 <-- |
| PRAI | JP 1989-114109 | | 19890509 | <-- | |

CLASS

| | PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|----|---|-------|---|
| | JP 03202343 | ICM | B32B015-04 |
| | | ICA | A01N061-00; A23L001-00; A61L009-01; B01D053-34; B05D007-24; B65D081-24; C23C004-10; C23C030-00 |
| AB | Metal parts are precoated with a ceramic-based mixture containing: metal oxides having high far-IR emissivity, and antistatic and bonding properties; a polymer for bonding; and an inorg. filler having high bactericidal effect and gas adsorptivity. The preferred coating mixts. contain powdered SiO ₂ , Al ₂ O ₃ , TiO ₂ , modified polypropylene, Cu or Ag salts, and zeolite. | | |
| ST | oxide coating metal IR emissivity; bactericidal ion coating metal; polypropylene coating metal bonding; ceramic coating mixt polymer; oxidn resistant coating metal; antistatic coating metal; deodorizing mixt coating metal | | |
| IT | Ceramic materials and wares (coating mixts. containing, metal parts with, for multiple-function service) | | |
| IT | Zeolites, uses RL: PRP (Properties) (coating mixts. containing, metal parts with, for multiple-function service) | | |
| IT | Bactericides, Disinfectants, and Antiseptics (coatings with, ceramic-based, on metal parts) | | |
| IT | Deodorants (coatings, on metal parts, ceramic-based mixts. for) | | |
| IT | Antistatic agents (coatings, on metal parts, ceramic-containing mixts. for) | | |
| IT | Coating materials (deodorizing, on metal parts, ceramic-based mixts. for) | | |
| IT | 1344-28-1, Alumina, properties 7440-22-4D, Silver, salts, uses 7440-50-8D, Copper, salts, uses 7631-86-9, Silica, uses 9003-07-0, Polypropylene 13463-67-7, Titania, uses RL: PRP (Properties) (coating mixts. containing, metal parts with, for multiple-function service) | | |
| IT | 1344-28-1, Alumina, properties 7440-50-8D, Copper, salts, uses 7631-86-9, Silica, uses 13463-67-7, Titania, uses RL: PRP (Properties) (coating mixts. containing, metal parts with, for multiple-function service) | | |
| RN | 1344-28-1 HCAPLUS | | |
| CN | Aluminum oxide (Al ₂ O ₃) (8CI, 9CI) (CA INDEX NAME) | | |

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7440-50-8 HCAPLUS

CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

L104 ANSWER 34 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:519099 HCAPLUS

DN 115:119099

ED Entered STN: 23 Sep 1991

TI Porcelain with coatings having deodorization, sterilization, far
-IR radiation, and antistatic properties

IN Yoshizawa, Noriyasu

PA Ain Corp., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C04B041-81

ICA A61L009-01

CC 57-3 (Ceramics)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 03075284 | A2 | 19910329 | JP 1989-222921 | 19890831 <-- |
| PRAI | JP 1989-114111 | | 19890509 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------|
| JP 03075284 | ICM | C04B041-81 |
| | ICA | A61L009-01 |

AB The title porcelain has a ceramic coating containing SiO₂, Al₂O₃, TiO₂, modified polypropylene, metal ion (e.g., Cu ion, Ag ion), and zeolite. Thus, a porcelain coated with the ceramic coating was put into a glass bottle and 110 ppm NH₃ was injected into the bottle. The residual NH₃ concentration was <0.5 ppm after 5 min.

ST porcelain ceramic coated deodorant; sterilization ceramic coated porcelain; IR radiating ceramic coated porcelain; antistatic ceramic coated porcelain

IT Zeolites, uses and miscellaneous

RL: USES (Uses)

(ceramic coatings containing, on porcelain, for gas adsorption)

IT Cations

(ceramic coatings containing, on porcelain, for sterilization and deodorization)

IT Porcelain

(coated with ceramics, for deodorization and sterilization and **far-IR radiation** and antistatic functions)

IT Sterilization and Disinfection
(porcelain for, coated with ceramics containing metal ions)

IT Deodorization
(porcelain for, coated with ceramics containing metal ions and zeolite)

IT Coating materials
(ceramic, alumina-silica-titania, on porcelain, for deodorization and sterilization and **far-IR radiation** and antistatic functions)

IT **Infrared radiation**
(**far-**, porcelain coated with ceramics for **radiation** of, containing silica)

IT 9003-07-0, Polypropylene 13463-67-7, Titania, uses and miscellaneous
RL: USES (Uses)
(ceramic coatings containing, on porcelain, for bonding ability)

IT 1344-28-1, Alumina, uses and miscellaneous
RL: USES (Uses)
(ceramic coatings containing, on porcelain, for bonding ability and antistatic function)

IT 7631-86-9, Silica, uses and miscellaneous
RL: USES (Uses)
(ceramic coatings containing, on porcelain, for bonding ability and **far-IR radiation**)

IT 7440-22-4, Silver, uses and miscellaneous 7440-50-8, Copper, uses and miscellaneous
RL: USES (Uses)
(ion, ceramic coatings containing, on porcelain, for sterilization and deodorization)

IT 64-19-7, Acetic acid, uses and miscellaneous 74-93-1, Methanethiol, uses and miscellaneous 75-50-3, Trimethylamine, uses and miscellaneous 7664-41-7, Ammonia, uses and miscellaneous 7783-06-4, Hydrogen sulfide, uses and miscellaneous
RL: REM (Removal or disposal); PROC (Process)
(removal of, from air, porcelain coated with ceramics containing metal ions and zeolite for)

IT 1335-30-4
RL: USES (Uses)
(zeolites, ceramic coatings containing, on porcelain, for gas adsorption)

IT 13463-67-7, Titania, uses and miscellaneous
RL: USES (Uses)
(ceramic coatings containing, on porcelain, for bonding ability)

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT 1344-28-1, Alumina, uses and miscellaneous
RL: USES (Uses)
(ceramic coatings containing, on porcelain, for bonding ability and antistatic function)

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 7631-86-9, Silica, uses and miscellaneous
RL: USES (Uses)
(ceramic coatings containing, on porcelain, for bonding ability and **far-IR radiation**)

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

IT 7440-50-8, Copper, uses and miscellaneous
 RL: USES (Uses)
 (ion, ceramic coatings containing, on porcelain, for sterilization and
 deodorization)
 RN 7440-50-8 HCAPLUS
 CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

L104 ANSWER 35 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:518999 HCAPLUS

DN 115:118999

ED Entered STN: 23 Sep 1991

TI Glass with coatings having deodorization, sterilization, far-
 IR radiation, and antistatic functions

IN Yoshizawa, Noriyasu

PA Ain Corp., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C03C017-32

ICS C03C017-23

ICA A61L009-01

CC 57-1 (Ceramics)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|--------------|-----------------|--------------|
| PI | JP 03075244 | A2 | 19910329 | JP 1989-222920 | 19890831 <-- |
| PRAI | JP 1989-114110 | | 19890509 <-- | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------|
| JP 03075244 | ICM | C03C017-32 |
| | ICS | C03C017-23 |
| | ICA | A61L009-01 |

AB The title glass has a ceramic coating containing SiO₂, Al₂O₃, TiO₂, modified polypropylene, metal ion, and zeolite. Thus, a glass sheet coated with the ceramic coating was put into a glass bottle and 110 ppm NH₃ was injected into the bottle. The residual NH₃ concentration was <0.5 ppm after 5 min.

ST glass ceramic coated deodorant; sterilization ceramic coated glass; IR radiating ceramic coated glass; antistatic ceramic coated glass

IT Zeolites, uses and miscellaneous

RL: USES (Uses)

(ceramic coatings containing, on glass, for gas adsorption)

IT Cations

(ceramic coatings containing, on glass, for sterilization and deodorization)

IT Sterilization and Disinfection

(glass for, coated with ceramics containing metal ions)

IT Deodorization

(glass for, coated with ceramics containing metal ions and zeolite)

IT Glass, oxide

- RL: USES (Uses)
(with ceramic coatings, for deodorization and sterilization and **far-IR radiation** and antistatic function)
- IT Coating materials
(ceramic, alumina-silica-titania, on glass, for deodorization and sterilization and **far-IR radiation** and antistatic functions)
- IT **Infrared radiation**
(**far-**, glass coated with ceramics for **radiation** of, containing silica)
- IT **13463-67-7**, Titania, uses and miscellaneous
RL: USES (Uses)
(ceramic coatings containing, on glass, for bonding ability)
- IT **1344-28-1**, Alumina, uses and miscellaneous
RL: USES (Uses)
(ceramic coatings containing, on glass, for bonding ability and antistatic function)
- IT **7631-86-9**, Silica, uses and miscellaneous
RL: USES (Uses)
(ceramic coatings containing, on glass, for bonding ability and **far-IR radiation**)
- IT 7440-22-4, Silver, uses and miscellaneous **7440-50-8**, Copper, uses and miscellaneous
RL: USES (Uses)
(ions, ceramic coatings containing, on glass, for sterilization and deodorization)
- IT 9003-07-0, Polypropylene
RL: USES (Uses)
(modified, ceramic coatings containing, on glass, for bonding ability)
- IT 64-19-7, Acetic acid, uses and miscellaneous 74-93-1, Methanethiol, uses and miscellaneous 75-50-3, Trimethylamine, uses and miscellaneous 7664-41-7, Ammonia, uses and miscellaneous 7783-06-4, Hydrogen sulfide, uses and miscellaneous
RL: REM (Removal or disposal); PROC (Process)
(removal of, from air, glass for, coated with ceramics containing metal ions and zeolite)
- IT 1335-30-4
RL: USES (Uses)
(zeolites, ceramic coatings containing, on glass, for gas adsorption)
- IT **13463-67-7**, Titania, uses and miscellaneous
RL: USES (Uses)
(ceramic coatings containing, on glass, for bonding ability)
- RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

- IT **1344-28-1**, Alumina, uses and miscellaneous
RL: USES (Uses)
(ceramic coatings containing, on glass, for bonding ability and antistatic function)
- RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)
- *** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
- IT **7631-86-9**, Silica, uses and miscellaneous
RL: USES (Uses)
(ceramic coatings containing, on glass, for bonding ability and **far-IR radiation**)
- RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

IT 7440-50-8, Copper, uses and miscellaneous
 RL: USES (Uses)
 (ions, ceramic coatings containing, on glass, for sterilization and
 deodorization)
 RN 7440-50-8 HCAPLUS
 CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

L104 ANSWER 36 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:457251 HCAPLUS

DN 115:57251

ED Entered STN: 10 Aug 1991

TI Sanitary mask containing gauze impregnated with deodorants and
bactericides

IN Yoshizawa, Noryasu

PA Ain Corp., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM A62B018-02

ICS A61L009-01

CC 63-7 (Pharmaceuticals)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 03085181 | A2 | 19910410 | JP 1989-220474 | 19890829 <-- |
| PRAI | JP 1989-220474 | | 19890829 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|-------|------------------------------------|
|------------|-------|------------------------------------|

| | | |
|-------------|-----|------------|
| JP 03085181 | ICM | A62B018-02 |
| | ICS | A61L009-01 |

AB A sanitary mask for doctors, nurses, and sanitation workers contains a
 gauze impregnated with SiO₂ (far IR emitter), Al₂O₃
 (an antielectrostatic), TiO₂ (a binder), modified polypropylene (a
 binder), Cu²⁺ (or Ag⁺) as a bactericide, and zeolite (a gas absorbent).
 The bactericidal and deodorant activities of the gauze were demonstrated.

ST sanitary mask bactericide deodorant

IT Zeolites, biological studies

RL: BIOL (Biological study)

(coating material containing, for sanitary mask)

IT Deodorants

(sanitary mask containing)

IT Medical goods

(sanitary mask, containing bactericides and deodorants)

IT Bactericides, Disinfectants, and Antiseptics

(medical, sanitary mask containing)

IT 1344-28-1, Aluminum oxide, biological studies 7440-22-4, Silver,
 biological studies 7440-50-8, Copper, biological studies

7631-86-9, Silica, biological studies 9003-07-0D, Polypropylene,
 derivs. 13463-67-7, Titanium oxide, biological studies

RL: BIOL (Biological study)

(coating material containing, for sanitary mask)

IT 1344-28-1, Aluminum oxide, biological studies 7440-50-8,
Copper, biological studies 7631-86-9, Silica, biological studies
13463-67-7, Titanium oxide, biological studies
RL: BIOL (Biological study)
(coating material containing, for sanitary mask)

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7440-50-8 HCAPLUS

CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

L104 ANSWER 37 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:457249 HCAPLUS

DN 115:57249

ED Entered STN: 10 Aug 1991

TI Medical tapes containing deodorants, microbicides, antielectrostatic, and
far infrared radiating agents

IN Yoshizawa, Noryasu

PA Ain Corp., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM A61K009-70

ICS A61K009-70; A61L009-01

CC 63-7 (Pharmaceuticals)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 03083919 | A2 | 19910409 | JP 1989-220475 | 19890829 <-- |
| PRAI | JP 1989-220475 | | 19890829 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------|
| JP 03083919 | ICM | A61K009-70 |
| | ICS | A61K009-70; A61L009-01 |

AB A medical tape such as bandage, poultice, etc., consists of metal oxides (**far IR-radiating**, antielectrostatic agents), adhesive polymers, inorg. fillers (bactericidal, gas-absorbing, gas-degrading agents). Thus, a tape was manufactured comprising a resin, SiO₂, Al₂O₃ (antielectrostatic), TiO₂, modified polypropylene (binder), Ca²⁺ or Ag⁺ (bactericide), and zeolite (gas-absorbent). Biol. properties of the tape were studied.

ST medical tape microbicide deodorant; bandage antielectrostatic
IT Deodorants
 (bandage and poultice containing)
IT Zeolites, biological studies
 RL: BIOL (Biological study)
 (clin. tapes containing)
IT Medical goods
 (bandages, containing microbicides and deodorants and **far**
 IR irradiating agents)
IT Bactericides, Disinfectants, and Antiseptics
 (medical, bandage and poultice containing)
IT Medical goods
 (poultices, containing microbicides and deodorants and **far**
 IR irradiating agents)
IT 1344-28-1, Alumina, biological studies 7440-22-4, Silver,
 biological studies 7440-50-8, Copper, biological studies
 7631-86-9, Silica, biological studies 9003-07-0, Polypropylene
 13463-67-7, Titania, biological studies
 RL: BIOL (Biological study)
 (clin. tapes containing)
IT 1344-28-1, Alumina, biological studies 7440-50-8,
 Copper, biological studies 7631-86-9, Silica, biological studies
 13463-67-7, Titania, biological studies
 RL: BIOL (Biological study)
 (clin. tapes containing)
RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 7440-50-8 HCAPLUS
CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

L104 ANSWER 38 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:451499 HCAPLUS
DN 115:51499
ED Entered STN: 10 Aug 1991
TI Antistatic, antibacterial, and **far-infrared**
 radiating plastic compositions
IN Yoshizawa, Noryasu
PA Ain Corp., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
DT Patent
LA Japanese

IC ICM C08L101-00
 ICS C08K003-22; C08K003-34
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 37

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 03084065 | A2 | 19910409 | JP 1989-220476 | 19890829 <-- |
| PRAI | JP 1989-220476 | | 19890829 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------|
| JP 03084065 | ICM | C08L101-00 |
| | ICS | C08K003-22; C08K003-34 |

AB Plastics having good deodorization properties contain ceramic additives containing antibacterial inorg. fillers which are capable to absorb and decompose gases. Thus, plastics containing an additive composition containing SiO₂,

Al₂O₃, TiO₂, modified polypropylene, Cu ions, Ag⁺, and zeolites had good antibacterial, deodorizing and **far-IR radiating** properties.

ST antistatic antibacterial deodorization plastic; **far IR radiation** plastic

IT Plastics

RL: USES (Uses)

(antistatic, antibacterial, **far-IR radiating**, and deodorizing)

IT Deodorization

(of gases, plastics for)

IT Zeolites, uses and miscellaneous

RL: USES (Uses)

(plastics containing, antistatic, antibacterial, **far-IR radiating**, and deodorizing)

IT 7440-50-8, Copper, properties

RL: PRP (Properties)

(ions, plastics containing, antistatic, antibacterial, **far-IR radiating**, and deodorizing)

IT 7631-86-9, Silica, uses and miscellaneous 9003-07-0D, Polypropylene, modified 13463-67-7, Titanium dioxide, properties 14701-21-4, Silver ion, uses and miscellaneous

RL: USES (Uses)

(plastics containing, antistatic, antibacterial, **far-IR radiating**, and deodorizing)

IT 1344-28-1, Alumina, properties

RL: PRP (Properties)

(plastics containing, antistatic, antibacterial, **far-IR radiating**, and deodorizing)

IT 7440-50-8, Copper, properties

RL: PRP (Properties)

(ions, plastics containing, antistatic, antibacterial, **far-IR radiating**, and deodorizing)

RN 7440-50-8 HCAPLUS

CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

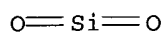
Cu

IT 7631-86-9, Silica, uses and miscellaneous 13463-67-7, Titanium dioxide, properties

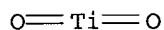
RL: USES (Uses)

(plastics containing, antistatic, antibacterial, **far-IR radiating**, and deodorizing)

RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 13463-67-7 HCAPLUS
 CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)



IT 1344-28-1, Alumina, properties
 RL: PRP (Properties)
 (plastics containing, antistatic, antibacterial, **far-IR**
radiating, and deodorizing)
 RN 1344-28-1 HCAPLUS
 CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L104 ANSWER 39 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1991:446341 HCAPLUS
 DN 115:46341
 ED Entered STN: 10 Aug 1991
 TI Manufacture of tobacco filters with deodorizing, antibiotic, **far**
-infrared radiation and antistatic properties
 IN Yoshizawa, Noryasu
 PA Ain Corp., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM A24F013-06
 ICS A24D003-16; D06M011-36
 CC 11-7 (Plant Biochemistry)
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 03083571 | A2 | 19910409 | JP 1989-220477 | 19890829 <-- |
| PRAI | JP 1989-220477 | | 19890829 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------|
| JP 03083571 | ICM | A24F013-06 |
| | ICS | A24D003-16; D06M011-36 |

AB The filter can be made by coating a filter which consists of various fibers, with a ceramic coating agent which consists of: (1) adhesive, **far-IR** irradiation, and antistatic metal oxide (e.g. SiO₂, Al₂O₃, TiO₂) (2) adhesive resin (e.g. modified polypropylene), and (3) antibiotic, gas-absorbing, and gas-decomposing inorg. filler (e.g. metal ion, zeolite). The coating can be done by spraying, dipping, rolling, etc. Thus, a coating agent powder consisting of SiO₂ (as adhesive and **far-IR** irradiation agent), Al₂O₃ (as adhesive and antistatic agent), TiO₂ (as adhesive and deodorizing agent, modified polypropylene (As adhesive), Cu ion or Ag⁺ (as antibiotic and gas-decomposing agent), zeolite (Ca·2Al₂O₃·5SiO₂; as gas-absorbent) was dissolved in alc. and sprayed to acetate fiber filter (diagram of apparatus for coating is given), the antibiotic and deodorizing effects were demonstrated.

ST cigarette filter deodorization antibiotic; **far IR**

irradg antistatic filter cigarette
 IT Zeolites, biological studies
 RL: BIOL (Biological study)
 (as smoke absorbent in manufacture of cigarette filter)
 IT Tobacco smoke and smoking
 (filters for, antimicrobial and far-IR irradg.
 materials in)
 IT Antistatic agents
 Deodorants
 (tobacco filter manufacture with)
 IT Coating materials
 (ceramic, tobacco filter manufacture with)
 IT Ceramic materials and wares
 (coatings, tobacco filter manufacture with)
 IT **Infrared radiation**
 (far-, emitters of, in manufacture of cigarette filter)
 IT 7440-22-4, Silver, biological studies
 RL: BIOL (Biological study)
 (as antibiotic and gas-decomposing agent in manufacture of cigarette filter)
 IT 1344-28-1, Aluminum oxide, biological studies 7631-86-9,
 Silicon dioxide, biological studies 13463-67-7, Titanium oxide,
 biological studies
 RL: BIOL (Biological study)
 (tobacco filter containing)
 IT 7440-50-8, Copper, biological studies 9003-07-0, Polypropylene
 RL: BIOL (Biological study)
 (tobacco filter manufacture with)
 IT 1335-30-4
 RL: BIOL (Biological study)
 (zeolites, as smoke absorbent in manufacture of cigarette filter)
 IT 1344-28-1, Aluminum oxide, biological studies 7631-86-9,
 Silicon dioxide, biological studies 13463-67-7, Titanium oxide,
 biological studies
 RL: BIOL (Biological study)
 (tobacco filter containing)
 RN 1344-28-1 HCAPLUS
 CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)
 *** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
 RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 13463-67-7 HCAPLUS
 CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT 7440-50-8, Copper, biological studies
 RL: BIOL (Biological study)
 (tobacco filter manufacture with)
 RN 7440-50-8 HCAPLUS
 CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

L104 ANSWER 40 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:431296 HCAPLUS

DN 115:31296

ED Entered STN: 27 Jul 1991

TI Deodorant bactericidal **far-infrared-radiating**
acid-resistant corrosion-resistant antistatic advertising signs

IN Yoshizawa, Noryasu

PA Ain Corp., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09D005-00

ICS C09D005-00; C09D005-14

CC 42-10 (Coatings, Inks, and Related Products)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 03084070 | A2 | 19910409 | JP 1989-220473 | 19890829 <-- |
| PRAI | JP 1989-220473 | | 19890829 | <-- | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------|
| JP 03084070 | ICM | C09D005-00 |
| | ICS | C09D005-00; C09D005-14 |

AB Advertising signs are coated with ceramic coating agents containing metal oxides having binder, **far-IR-radiating**, acid-resistant, corrosion-resistant, and antistatic properties, polymer binders, and inorg. fillers having gas adsorption and gas decomposition properties. Thus, a coating agent contained SiO₂, Al₂O₃, TiO₂, modified polypropylene, Cu or Ag ions, and zeolites.

ST ceramic coating advertising sign; silica alumina titania coating; copper coating advertising sign; silver coating advertising sign; zeolite coating advertising sign

IT Zeolites, uses and miscellaneous
RL: USES (Uses)
(adsorbents, ceramic coatings containing, on advertising signs)

IT Antistatic agents
(alumina, ceramic coatings containing, on advertising signs)

IT Deodorants
(copper and silver ions, ceramic coatings containing, on advertising signs)

IT Coating materials
(metal oxides, containing modified polypropylene and metal and zeolites, on advertising sign)

IT Ceramic materials and wares
(coatings, on advertising signs)

IT 7440-22-4, Silver, uses and miscellaneous 7440-50-8, Copper, uses and miscellaneous
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(bactericide, ceramic coatings containing, on advertising signs)

IT 1344-28-1, Alumina, uses and miscellaneous 7631-86-9, Silica, uses and miscellaneous 13463-67-7, Titanium dioxide, uses and miscellaneous
RL: USES (Uses)
(ceramics coating containing, on advertising sign)

IT 9003-07-0D, Polypropylene, modified
RL: TEM (Technical or engineered material use); USES (Uses)
(coatings, containing inorg. compds., on advertising sign)

IT 1335-30-4
RL: USES (Uses)

(zeolites, adsorbents, ceramic coatings containing, on advertising signs)
 IT 7440-50-8, Copper, uses and miscellaneous
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
 (bactericide, ceramic coatings containing, on advertising signs)
 RN 7440-50-8 HCAPLUS
 CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

IT 1344-28-1, Alumina, uses and miscellaneous 7631-86-9,
 Silica, uses and miscellaneous 13463-67-7, Titanium dioxide,
 uses and miscellaneous
 RL: USES (Uses)
 (ceramics coating containing, on advertising sign)
 RN 1344-28-1 HCAPLUS
 CN Aluminum oxide (Al2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

$$\text{O}=\text{Si}=\text{O}$$

RN 13463-67-7 HCAPLUS
 CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

$$\text{O}=\text{Ti}=\text{O}$$

L104 ANSWER 41 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1991:11526 HCAPLUS
 DN 114:11526
 ED Entered STN: 12 Jan 1991
 TI Ceramic deodorants and their preparation and use
 IN Fujita, Fujio
 PA K., Amos Y., Japan
 SO Jpn. Kokai Tokkyo Koho, 3 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM B01J020-10
 ICS A61L009-16; C04B035-18
 CC 59-6 (Air Pollution and Industrial Hygiene)
 Section cross-reference(s): 38, 42, 43, 57

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 02174933 | A2 | 19900706 | JP 1988-327808 | 19881227 <-- |
| PRAI | JP 1988-327808 | | 19881227 | <-- | |

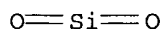
CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------|
| JP 02174933 | ICM | B01J020-10 |
| | ICS | A61L009-16; C04B035-18 |

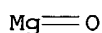
AB The ceramics, having a catalytic deodorizing effect, are mixts. of SiO2 powder, containing at least Y and Ba and

prepared by sintering at high temperature, **MgO** powder prepared by sintering at high temperature and reductive-cooling, and **Al₂O₃** powder in a prescribed mixing ratio. The **SiO₂** powder is prepared by sintering at 1100-1700° for a few hs., and the **MgO** powder is prepared by heating to 1100° for 7 hs. and cooling in a reducing atmospheric for 24 hs. The deodorants may used in ceramics, plastic, glass, or paint for deodorization.

- ST deodorant ceramic **silica** magnesia alumina; plastic ceramic deodorant additive; glass ceramic deodorant additive; paint ceramic deodorant additive
- IT **Deodorants**
(alumina-magnesia-**silica** mixture for, preparation and use of)
- IT Paper
Fibers
Polymers, uses and miscellaneous
RL: OCCU (Occurrence)
(deodorants for, alumina-magnesia-**silica**, manufacture of)
- IT Ceramic materials and wares
(deodorants, alumina-magnesia-**silica** mixture)
- IT Coating materials
(paints, deodorants for, alumina-magnesia-**silica**, manufacture of)
- IT 7631-86-9, **Silica**, biological studies
RL: BIOL (Biological study)
(**barium**- and **yttrium**-containing, deodorants containing alumina and magnesia and, preparation and use of)
- IT 1309-48-4P, **Magnesium oxide**, uses and miscellaneous
RL: PREP (Preparation); USES (Uses)
(deodorant mixts. containing **silica** and alumina and, manufacture and use of)
- IT 1344-28-1P, **Aluminum oxide (Al₂O₃)**, biological studies
RL: BIOL (Biological study); PREP (Preparation)
(deodorants containing magnesia and **silica** and, manufacture and use of)
- IT 7440-39-3, **Barium**, uses and miscellaneous
7440-65-5, **Yttrium**, uses and miscellaneous
RL: USES (Uses)
(**silica** containing, deodorants containing alumina and magnesia and, manufacture and use of)
- IT 7631-86-9, **Silica**, biological studies
RL: BIOL (Biological study)
(**barium**- and **yttrium**-containing, deodorants containing alumina and magnesia and, preparation and use of)
- RN 7631-86-9 HCAPLUS
- CN **Silica** (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- IT 1309-48-4P, **Magnesium oxide**, uses and miscellaneous
RL: PREP (Preparation); USES (Uses)
(deodorant mixts. containing **silica** and alumina and, manufacture and use of)
- RN 1309-48-4 HCAPLUS
- CN **Magnesium oxide (MgO)** (9CI) (CA INDEX NAME)



IT 1344-28-1P, Aluminum oxide (Al₂O₃),
biological studies
RL: BIOL (Biological study); PREP (Preparation)
(deodorants containing magnesia and silica and, manufacture and use
of)

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 7440-39-3, Barium, uses and miscellaneous

7440-65-5, Yttrium, uses and miscellaneous

RL: USES (Uses)

(silica containing, deodorants containing alumina and magnesia and,
manufacture and use of)

RN 7440-39-3 HCAPLUS

CN Barium (8CI, 9CI) (CA INDEX NAME)

Ba

RN 7440-65-5 HCAPLUS

CN Yttrium (8CI, 9CI) (CA INDEX NAME)

Y

L104 ANSWER 42 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1989:583768 HCAPLUS

DN 111:183768

ED Entered STN: 10 Nov 1989

TI Crystal chemical factors influencing the position of long and short
wavelength transmission cut-off in optical materials

AU Kasymova, S. S.; Milyukov, E. M.; Petrovskii, G. T.

CS Tashkent State Med. Inst., Tashkent, USSR

SO Transactions of the Indian Ceramic Society (1988), 47(6), 172-5,
171

CODEN: TICSAP; ISSN: 0371-750X

DT Journal

LA English

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other
Related Properties)

Section cross-reference(s): 75

AB Long and short wave transmission edge nonactivated crystalline and glasslike
materials (optical, semiconducting, and acoustic) are modified exclusively
by crystal chemical factors-ionic and covalent radii. The polarization and
coordination nos. of atoms and ions in crystalline and glass network define the
boundaries of transparency as they influence the sum of effective atom and
ion radii. The distance between ions is decreased by ion polarization and
becomes less than the sum of cation and anion radii. The covalent radius
of the central ion is decreased with decrease of its coordination number

ST optical material transmission crystal factor

IT Crystal structure-property relationship
(in transmission cut-off in optical materials)

IT Infrared radiation

Ultraviolet radiation

(transmission cut off of, in optical materials, crystal chemical factors
influencing position of)

IT Optical materials

(transmission cut-off in, crystal chemical factors influencing position
of)

- IT Glass, nonoxide
Glass, oxide
RL: PRP (Properties)
(transmission cutoff of, crystal chemical factors in position of)
- IT Clays, compounds
RL: PRP (Properties)
(flint, calcined, transmission cutoff of, crystal chemical factors in position of)
- IT 12031-63-9
RL: USES (Uses)
(transmission cut-off in crystal chemical factors influencing position of)
- IT 1306-25-8, Cadmium monotelluride, properties 1310-53-8, **Germanium** dioxide, properties 1317-36-8, Lead monoxide, properties 7440-21-3, Silicon, properties 7790-75-2, Calcium tungstate (CaWO₄) 12063-56-8, YIG **13463-67-7, Titanium dioxide**, properties 18282-10-5, Tin dioxide 123243-93-6, Gadolinium molybdenum oxide (GdMo₃O₁₂)
RL: PRP (Properties)
(transmission cut-off in crystal chemical factors influencing position of)
- IT 471-34-1, Calcium carbonate (CaCO₃), properties 1303-00-0, Gallium arsenide, properties 1303-33-9, Arsenic sesquisulfide 1303-36-2, Arsenic sesquiselenide 1303-86-2, Boron sesquioxide, properties 1304-76-3, Bismuth sesquioxide, properties **1305-78-8, Calcium oxide**, properties 1306-23-6, Cadmium monosulfide, properties 1306-24-7, Cadmium monoselenide, properties **1309-48-4, Magnesium oxide**, properties 1309-64-4, Antimony sesquioxide, properties 1312-81-8, **Lanthanum sesquioxide 1313-59-3, Sodium oxide**, properties 1314-13-2, **Zinc oxide**, properties 1314-20-1, Thorium dioxide, properties 1314-87-0, Lead monosulfide 1314-98-3, **Zinc monosulfide**, properties 1315-09-9, **Zinc monoselenide 1344-28-1**, Alumina, properties 1344-48-5, Mercuric sulfide 7440-36-0, Antimony, properties 7440-38-2, Arsenic, properties **7440-56-4, Germanium**, properties 7446-07-3, Tellurium dioxide 7447-40-7, Potassium chloride, properties 7447-41-8, **Lithium chloride**, properties 7550-35-8, **Lithium bromide 7631-86-9, Silica**, properties 7647-14-5, Sodium chloride, properties 7647-15-6, Sodium bromide, properties 7647-17-8, Cesium chloride, properties 7681-11-0, Potassium iodide (KI), properties 7681-49-4, Sodium fluoride, properties 7681-82-5, Sodium iodide, properties 7722-76-1, Ammonium dihydrogen phosphate 7758-02-3, Potassium bromide, properties 7778-77-0, KDP 7782-49-2, Selenium, properties 7782-68-5, Iodic acid (HIO₃) 7783-40-6, Magnesium fluoride 7783-90-6, Silver chloride, properties 7783-96-2, Silver iodide 7785-23-1, Silver bromide 7787-49-7, Beryllium fluoride 7787-69-1, Cesium bromide 7787-70-4, Cuprous bromide 7789-17-5, Cesium iodide 7789-23-3, Potassium fluoride 7789-24-4, **Lithium fluoride**, properties 7789-40-4, Thallium bromide 7789-75-5, Calcium fluoride, properties 7790-30-9, Thallium iodide 7790-79-6, Cadmium fluoride 7791-12-0, Thallium chloride 9003-35-4, SF₁₁ 10112-91-1, Mercurous chloride 10190-55-3, Lead molybdate (PbMoO₄) 10377-51-2, **Lithium iodide** 12031-66-2, **Lithium tantalate (LiTaO₃)** 12047-27-7, **Barium titanate (BaTiO₃)**, properties 12057-24-8, **Lithium oxide**, properties 12060-00-3, Lead titanate (PbTiO₃) 12060-59-2, **Strontium titanate (SrTiO₃)** 12063-98-8, Gallium phosphide, properties 12068-51-8, Magnesium aluminate (MgAl₂O₄) 12233-73-7, Bismuth **germanium oxide (Bi₁₂GeO₂₀)** 12435-57-3, Lead **germanium oxide (Pb₅Ge₃O₁₁)** 13400-13-0, Cesium fluoride 13470-04-7, **Strontium molybdate (SrMoO₄)** 13494-80-9, Tellurium, properties 13709-38-1, **Lanthanum trifluoride** 13709-59-6, Thorium tetrafluoride 13765-03-2, **Lithium iodate (LiIO₃)** 14648-48-7, Lead molybdenum oxide (Pb₂MoO₅) 15122-57-3, Silver arsenic sulfide

(Ag₃AsS₃) 16142-89-5, Thallium arsenic selenide (Tl₃AsSe₃) 16701-98-7
 18088-11-4, Rubidium oxide 37195-38-3, LK1 51777-79-8, Gallium
 difluoride 52932-41-9, KRS-6 60676-86-0, Spectrosil 76363-73-0,
 KRS-5 (optical material) 113553-04-1, KRS-13 123243-92-5, Bismuth
germanium oxide (Bi₂GeO₄) 123314-38-5, Antimony silver sulfide
 (SbAg₃S)

RL: PRP (Properties)

(transmission cut-off in, crystal chemical factors influencing position
 of)

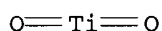
IT 13463-67-7, **Titanium dioxide**, properties

RL: PRP (Properties)

(transmission cut-off in crystal chemical factors influencing position of)

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)



IT 1305-78-8, **Calcium oxide**, properties

1309-48-4, **Magnesium oxide**, properties

1313-59-3, **Sodium oxide**, properties

1344-28-1, **Alumina**, properties 7440-56-4,

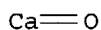
Germanium, properties 7631-86-9, **Silica**,
 properties

RL: PRP (Properties)

(transmission cut-off in, crystal chemical factors influencing position
 of)

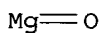
RN 1305-78-8 HCAPLUS

CN Calcium oxide (CaO) (9CI) (CA INDEX NAME)



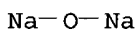
RN 1309-48-4 HCAPLUS

CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)



RN 1313-59-3 HCAPLUS

CN Sodium oxide (Na₂O) (9CI) (CA INDEX NAME)



RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7440-56-4 HCAPLUS

CN Germanium (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 43 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1989:86765 HCAPLUS

DN 110:86765

ED Entered STN: 04 Mar 1989

TI Manufacture of a multilayer ceramic circuit board

IN Shinohara, Koichi; Ushifusa, Nobuyuki; Nagayama, Kosei; Ogiwara, Satoru

PA Hitachi, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H05K003-46

ICS B32B018-00

CC 76-2 (Electric Phenomena)

Section cross-reference(s): 57

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|--------------|-----------------|--------------|
| PI | JP 63136697 | A2 | 19880608 | JP 1986-281794 | 19861128 <-- |
| PRAI | JP 1986-281794 | | 19861128 <-- | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------|
| JP 63136697 | ICM | H05K003-46 |
| | ICS | B32B018-00 |

AB The manufacturing process involves: forming a mask of the interconnection pattern on a green sheet formed from a ceramic insulator powder, resin, solvent, etc.; applying an electron beam, IR **radiation**, or laser to form patterned grooves in the sheet; filling the grooves with a powder of an elec. conductor; laminating the green sheets to form a body; and sintering the formed body. The ceramic insulator powder is that of a material which can be sintered at <1000°, or of Al₂O₃, mullite, a mullite-SiO₂ complex, or Al nitride. The process can form low-resistance interconnections in the circuit board.

ST multilayer ceramic circuit board

IT Electron beam, chemical and physical effects

Infrared radiation, chemical and physical effectsLaser **radiation**, chemical and physical effects

(in manufacture of multilayer elec. circuit boards)

IT Glass, oxide

Polyesters, uses and miscellaneous

RL: USES (Uses)

(multilayer circuit boards containing, manufacture of)

IT Electric circuits

(printed, boards, multilayer, ceramic, manufacture of)

IT **1344-28-1**, Alumina, uses and miscellaneous 7439-98-7,

Molybdenum, uses and miscellaneous 7440-22-4, Silver, uses and

miscellaneous 7440-33-7, Tungsten, uses and miscellaneous

7440-50-8, Copper, uses and miscellaneous 7440-57-5, Gold, usesand miscellaneous **7631-86-9**, Silica, uses and miscellaneous7789-75-5, Calcium fluoride (CaF₂), uses and miscellaneous 9003-63-8,Poly(n-butylmethacrylate) 11100-79-1 12057-24-8, Lithium oxide (Li₂O),uses and miscellaneous **12136-45-7**, Potassium oxide (K₂O), uses

and miscellaneous 24304-00-5, Aluminum nitride (AlN)

RL: USES (Uses)

(multilayer circuit boards containing, manufacture of)

IT **1344-28-1**, Alumina, uses and miscellaneous **7440-50-8**,Copper, uses and miscellaneous **7631-86-9**, Silica, uses and

miscellaneous 12136-45-7, Potassium oxide (K2O), uses and
miscellaneous

RL: USES (Uses)

(multilayer circuit boards containing, manufacture of)

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7440-50-8 HCAPLUS

CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 12136-45-7 HCAPLUS

CN Potassium oxide (K2O) (8CI, 9CI) (CA INDEX NAME)

K-O-K

L104 ANSWER 44 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:560225 HCAPLUS

DN 109:160225

ED Entered STN: 28 Oct 1988

TI Which material parameters are required for hollow fibers transmitting
high-power IR-radiation?

AU Nattermann, K.; Hoffmann, H. J.; Neuroth, N.

CS SCHOTT Glaswerke, Mainz, Fed. Rep. Ger.

SO Proceedings of SPIE-The International Society for Optical Engineering (
1988), 929(Infrared Opt. Mater. 6), 124-32

CODEN: PSISDG; ISSN: 0277-786X

DT Journal

LA English

CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other
Related Properties)

AB Hollow fibers are regarded as potential waveguides for radiation
from CO2 lasers. Conditions are reported for hollow fibers capable of
delivering high-power radiation (.apprx.100 W). Fibers were
considered with an air-filled core and a massive uncoated cladding. Tech.
requirements concerning the transmittance, numerical aperture, bending
radius, and thermal effects led to conditions for the n and absorption
indexes of the cladding material. Until now no oxide glass is known that
is suitable for hollow fibers transmitting high-power radiation
in the mid-IR region. Further investigations were done with the
parameters of crystalline, metallic, and semiconducting materials. These
materials do not fulfill the requirements of high-power hollow fibers
either.

ST IR transmission hollow fiber

IT Infrared radiation

(material parameters for hollow fibers transmitting)

IT Absorptivity

Optical reflection

Refractive index and Optical refraction

(of hollow fibers for IR transmission)

IT **Laser radiation**

(IR, material parameters for hollow fibers transmitting)

IT Optical fibers

(hollow-core, material parameters for, for IR transmission)

IT 409-21-2, Silicon carbide, properties 1304-56-9 1310-53-8, Germanium dioxide, properties **1344-28-1**, Alumina, uses and miscellaneous 7429-90-5, Aluminum, properties **7439-93-2**, Lithium, properties 7440-09-7, Potassium, properties 7440-22-4, Silver, properties 7440-23-5, Sodium, properties **7440-50-8**, Copper, properties 7440-57-5, Gold, properties 7447-41-8, Lithium chloride, properties 7580-67-8, Lithium hydride **7631-86-9**, Silica, properties 7681-49-4, properties 7789-23-3, Potassium fluoride 7789-24-4, Lithium fluoride, properties 10043-11-5, Boron nitride, properties 13587-16-1, Lithium deuteride

RL: PRP (Properties)

(parameters of, for hollow fibers for IR transmission)

IT **1344-28-1**, Alumina, uses and miscellaneous **7439-93-2**, Lithium, properties **7440-50-8**, Copper, properties **7631-86-9**, Silica, properties

RL: PRP (Properties)

(parameters of, for hollow fibers for IR transmission)

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7439-93-2 HCAPLUS

CN Lithium (7CI, 8CI, 9CI) (CA INDEX NAME)

Li

RN 7440-50-8 HCAPLUS

CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 45 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:82177 HCAPLUS

DN 108:82177

ED Entered STN: 05 Mar 1988

TI A ceramic composition for body warming by **far-IR radiation**

IN Koyama, Yutaka; Tokuyama, Tatsuo; Ito, Isamu; Oyama, Toshiki; Matsuo, Mitsuharu

PA Neos Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09K005-00

ICS A61F007-00

CC 63-7 (Pharmaceuticals)

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------------|------|--------------|-----------------|--------------|
| PI JP 62230880 | A2 | 19871009 | JP 1986-307230 | 19861222 <-- |
| PRAI JP 1985-291145 | | 19851223 <-- | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------|
| JP 62230880 | ICM | C09K005-00 |
| | ICS | A61F007-00 |

AB A composition for **far-IR radiation** is comprised of powderlike or granular material which generates heat in presence of H₂O and/or O, and a powderlike or granular material which **irradiates** for IR **radiation** upon heating. A composition for a hand warmer was comprised of Fe powders, sawdust, activated C, H₂O, NaCl, and mullite powders.

ST **far IR radiation** heating compn

IT Heating systems and Heaters
(**far-IR radiation** composition for, alumina in)

IT Ceramic materials and wares
(heating composition as, for body warming)

IT Sawdust
(heating composition containing alumina and, for body warming)

IT Ores and Ore deposits
RL: BIOL (Biological study)
(heating composition containing, for body warming)

IT Hand
(warming of, by **far-IR radiation**, ceramic materials for)

IT **Infrared radiation, chemical and physical effects**
(**far-**, body heating by, ceramic materials for)

IT **7440-44-0**, Activated carbon, biological studies
RL: BIOL (Biological study)
(activated, heating composition containing alumina and, for body warming)

IT **1309-37-1**, biological studies 7439-89-6, Iron, biological studies 7631-86-9, Silica, biological studies 7647-14-5, Sodium chloride, biological studies
RL: BIOL (Biological study)
(heating composition containing alumina and, for body warming)

IT 1302-93-8, Mullite **1344-28-1**, biological studies
RL: BIOL (Biological study)
(heating composition containing, for body warming)

IT **7440-44-0**, Activated carbon, biological studies
RL: BIOL (Biological study)
(activated, heating composition containing alumina and, for body warming)

RN 7440-44-0 HCAPLUS

CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

C

IT **1309-37-1**, biological studies 7631-86-9, Silica, biological studies
RL: BIOL (Biological study)
(heating composition containing alumina and, for body warming)

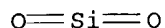
RN 1309-37-1 HCAPLUS

CN Iron oxide (Fe₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7631-86-9 HCAPLUS

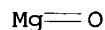
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 1344-28-1, biological studies
RL: BIOL (Biological study)
(heating composition containing, for body warming)
RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L104 ANSWER 46 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1986:118779 HCAPLUS
DN 104:118779
ED Entered STN: 05 Apr 1986
TI Relation of optical properties of multicomponent dispersions to wavelength
AU Yurevich, F. B.; Yatskevich, G. M.; Fogelev, V. A.; Karas, S. M.
CS USSR
SO Teplomassoobmen-vii. Materialy 7 Vses. Konf. po Teplomassoobmenu, Minsk,
Mai, 1984, Minsk (1984), (2), 167-71
From: Ref. Zh., Fiz. (A-Zh.) 1985, Abstr. No. 8L46
DT Journal
LA Russian
CC 73-2 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)
Section cross-reference(s): 66
AB Title only translated.
ST light scattering multicomponent aerosol; IR scattering multicomponent
aerosol
IT Aerosols
(multicomponent, scattering of IR radiation by)
IT Infrared radiation
Light
(scattering of, by multicomponent aerosols)
IT 1309-48-4, properties 7440-44-0, properties
7631-86-9, properties
RL: PRP (Properties)
(multicomponent aerosols containing, scattering of IR radiation
by)
IT 1309-48-4, properties 7440-44-0, properties
7631-86-9, properties
RL: PRP (Properties)
(multicomponent aerosols containing, scattering of IR radiation
by)
RN 1309-48-4 HCAPLUS
CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)



RN 7440-44-0 HCAPLUS
CN Carbon (7CI, 8CI, 9CI) (CA INDEX NAME)

C

RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

L104 ANSWER 47 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1982:410915 HCAPLUS

DN 97:10915

ED Entered STN: 12 May 1984

TI Infrared **radiator**

IN Ikeda, Masaki; Nishino, Atsushi; Susuki, Tadashi

PA Matsushita Electric Industrial Co., Ltd. , Japan

SO Brit. UK Pat. Appl., 15 pp.

CODEN: BAXXDU

DT Patent

LA English

IC C04B035-00; C03C003-30; C03C007-00

CC 57-9 (**Ceramics**)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | GB 2081245 | A | 19820217 | GB 1981-22687 | 19810723 <-- |
| | GB 2081245 | B2 | 19840516 | | |
| | JP 57026168 | A2 | 19820212 | JP 1980-101627 | 19800723 <-- |
| | JP 60014830 | B4 | 19850416 | | |
| | US 4377618 | A | 19830322 | US 1981-286185 | 19810722 <-- |
| PRAI | JP 1980-101627 | | 19800723 | <-- | |
| | JP 1980-122615 | | 19800903 | <-- | |

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

GB 2081245 IC C04B035-00IC C03C003-30IC C03C007-00

AB An IR **radiator**, for cooking and heating devices, is comprised of a molded mass from powdered IR-**radiating** material (metal oxides, carbides, and nitrides, graphite, or Ni-coated graphite) 10-200 μ particle size and a frit 1-100 μ in weight ratio (0.2-9):1. The powders are fused together on molding with or without a metallic substrate. Alternatively the IR-**radiator** is comprised of a metallic substrate with an enamel layer which is roughened to surface center line average roughness (Ra) of >1 μ and coated with the IR- **radiating** material by plasma spraying. Thus, an Al₂O₃.TiO₂ coating was spray coated on an enamelled aluminized Fe substrate roughened by blasting to Ra 5 μ to give **radiators** of size 60 + 180 mm which in heat cycling performance tests and coating-separability tests (as salt, cementation, and sulfide corrosion) gave no change compared to the initial performance.

ST IR **radiating** coating heater cooking

IT Cooking
(IR-**radiating** ceramic coated heater for)

IT Coating materials
(ceramic, IR-**radiating**, on metal substrates, for cooking)

IT **Infrared radiation**
(emission of, ceramic coatings for, for cooking)

IT 54791-42-3
RL: USES (Uses)
(IR-**radiating** ceramic coatings on, for cooking apparatus)

IT 7439-89-6, uses and miscellaneous
RL: USES (Uses)
(aluminized, IR-**radiating** ceramic coatings on, for cooking apparatus)

IT 409-21-2, uses and miscellaneous 1344-28-1, uses and miscellaneous 7631-86-9, uses and miscellaneous 7782-42-5, uses and miscellaneous 12068-51-8 13463-67-7, uses and

miscellaneous

RL: USES (Uses)

(coatings, IR-radiating, on metallic substrates, for cooking apparatus)

IT 7440-02-0, uses and miscellaneous

RL: USES (Uses)

(graphite coated with, IR-radiating coatings of, on metal substrates, for cooking apparatus)

IT 1344-28-1, uses and miscellaneous 7631-86-9, uses and miscellaneous 13463-67-7, uses and miscellaneous

RL: USES (Uses)

(coatings, IR-radiating, on metallic substrates, for cooking apparatus)

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7631-86-9 HCAPLUS

CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO₂) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT 7440-02-0, uses and miscellaneous

RL: USES (Uses)

(graphite coated with, IR-radiating coatings of, on metal substrates, for cooking apparatus)

RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

L104 ANSWER 48 OF 49 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1982:152471 HCAPLUS

DN 96:152471

ED Entered STN: 12 May 1984

TI Theoretical overview of losses in infrared fibers

AU Sparks, Marshall G.; DeShazer, L. G.

CS Sci. Res. Cent., Santa Monica, CA, 90401, USA

SO Proceedings of SPIE-The International Society for Optical Engineering (1981), 266(Infrared Fibers (0.8-12 μm)), 3-9

CODEN: PSISDG; ISSN: 0277-786X

DT Journal

LA English

CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

AB Plots of intrinsic scattering and absorption coeffs., the so-called V curves, are compiled for 18 crystalline materials. Extrinsic scattering coeffs. are evaluated for voids, inclusions, surface imperfections, dislocations, strains and anisotropic grains. Reduction of this extrinsic scattering is a major problem that must be solved in order to attain low-attenuation (10⁻² dB/km) fibers.

ST IR fiber absorption scattering
 IT Alkali metal halides, properties
 Alkaline earth fluorides
 Group IIB element chalcogenides
 RL: PRP (Properties)
 (absorption and intrinsic scattering coeffs. of, IR fiber loss in relation to)
 IT Optical absorption
 (by crystalline materials for IR fiber)
 IT Fiber optics
 (losses in fibers for, theor. overview of)
 IT **Infrared radiation**
 (scattering of, in crystalline materials for IR fibers)
 IT 1303-00-0, properties 1306-25-8, properties **1309-48-4**,
 properties 1314-98-3, properties 1315-09-9 **1344-28-1**,
 properties 7447-40-7, properties **7631-86-9**, properties
 7647-14-5, properties 7681-11-0, properties 7681-49-4, properties
 7758-02-3, properties 7783-40-6 7783-48-4 7787-32-8 7789-24-4,
 properties 7789-75-5, properties 12047-27-7, properties
 RL: PRP (Properties)
 (adsorption and intrinsic scattering coeffs. of, IR fiber loss in relation to)
 IT 1303-33-9 7440-21-3, properties **7440-56-4**, properties
 RL: PRP (Properties)
 (intrinsic scattering coefficient of, IR fiber loss in relation to)
 IT **1309-48-4**, properties **1344-28-1**, properties
7631-86-9, properties
 RL: PRP (Properties)
 (adsorption and intrinsic scattering coeffs. of, IR fiber loss in relation to)
 RN 1309-48-4 HCAPLUS
 CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

Mg=O

RN 1344-28-1 HCAPLUS
 CN Aluminum oxide (Al₂O₃) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7631-86-9 HCAPLUS
 CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

IT **7440-56-4**, properties
 RL: PRP (Properties)
 (intrinsic scattering coefficient of, IR fiber loss in relation to)
 RN 7440-56-4 HCAPLUS
 CN Germanium (7CI, 8CI, 9CI) (CA INDEX NAME)

Ge

ED Entered STN: 12 May 1984
TI Photon emission from low-energy ion and neutral bombardment of solids
AU Tolk, N. H.; Simms, D. L.; Foley, E. B.; White, C. W.
CS Bell Lab., Murray Hill, NJ, USA
SO Radiation Effects (1973), 18(3-4), 221-9
CODEN: RAEFBL; ISSN: 0033-7579
DT Journal
LA English
CC 73-3 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other **Optical** Properties)
Section cross-reference(s): 65, 76
AB Low-energy heavy particle bombardment of solid surfaces is observed to be accompanied by the emission of ir, visible and uv **radiation**. Line **radiation** arising from transitions between discrete atomic or mol. levels may be attributed to the decay of sputtered or backscattered excited particles which have escaped the surface. Broadband continuum **radiation** which is also observed in low-energy heavy particle collisions with surfaces arises from the surface and appears to be a strictly solid state phenomenon. Measurement of collision induced optical **radiation** constitutes a powerful tool for studies of the fundamental outershell electronic processes which result from the interaction of low-energy atomic particles with solids.
ST bombardment solid photon emission
IT Ions in gases
(bombardment of solids with low-energy, photon emission on)
IT **Infrared light**
Light
Ultraviolet light
(emission, on low-energy ion and neutral bombardment of solids)
IT 14791-69-6, properties
RL: PRP (Properties)
(bombardment of solids, emission spectra from)
IT 12184-90-6, properties
RL: PRP (Properties)
(copper photon emission on bombardment with)
IT 7727-37-9, properties
RL: PRP (Properties)
(impact on solids, photon emission from)
IT 7789-75-5, properties
RL: PRP (Properties)
(photon emission from helium impact on)
IT 1344-28-1, properties 7631-86-9, properties 7789-24-4, properties
RL: PRP (Properties)
(photon emission from, on helium impact)
IT 13966-04-6, properties
RL: PRP (Properties)
(photon emission on bombardment of metals with)
IT 7440-59-7, properties
RL: PRP (Properties)
(photon emission on impact with calcium fluoride)
IT 7440-24-6, properties
RL: PRP (Properties)
(spectral line of nickel containing, excited by ion bombardment)
IT 3315-37-5
RL: PRP (Properties)
(spectral line of, in spectra of argon-ion bombarded nickel and copper)
IT 7440-02-0, properties 7440-50-8, properties
RL: PRP (Properties)
(spectral lines of, from ion bombardment)
IT 12385-13-6, properties
RL: PRP (Properties)
(spectral lines of, in spectra of argon-ion bombarded nickel)

IT 7440-23-5, properties
RL: PRP (Properties)
(spectral lines of, in spectra of argon-ion bombarded nickel and copper)
IT 7440-21-3, properties
RL: PRP (Properties)
(spectral lines of, on ion bombardment)
IT 1344-28-1, properties 7631-86-9, properties
RL: PRP (Properties)
(photon emission from, on helium impact)
RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

IT 7440-24-6, properties
RL: PRP (Properties)
(spectral line of nickel containing, excited by ion bombardment)
RN 7440-24-6 HCAPLUS
CN Strontium (8CI, 9CI) (CA INDEX NAME)

Sr

IT 7440-02-0, properties 7440-50-8, properties
RL: PRP (Properties)
(spectral lines of, from ion bombardment)
RN 7440-02-0 HCAPLUS
CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

RN 7440-50-8 HCAPLUS
CN Copper (7CI, 8CI, 9CI) (CA INDEX NAME)

Cu

=> => d all hitstr

L106 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:754207 HCAPLUS
DN 128:16451
ED Entered STN: 03 Dec 1997
TI Calcium phosphate-based glasses and glass ceramics
manufacture of the glass ceramics
IN Fujimine, Satoru; Usui, Hiroshi; Osaki, Yassuko; Ma
PA Asahi Glass Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent

*These 4 refs
cited by
applicant's
patent*

LA Japanese
 IC ICM C03C003-17
 ICS C03C010-02; A61K006-033
 CC 63-7 (Pharmaceuticals)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|--------------|
| PI | JP 09301734 | A2 | 19971125 | JP 1996-120556 | 19960515 <-- |
| PRAI | JP 1996-120556 | | 19960515 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------|
| JP 09301734 | ICM | C03C003-17 |
| | ICS | C03C010-02; A61K006-033 |

AB The title glasses contain P (as **P2O5**) 64-70, Ca (as **CaO**) 13-20, **Sr** (as **SrO**) 7-13, and Al and/or **Ce** (as **Al2O3** and/or **Ce2O3**) 3-15 weight% with molar ratio of (**CaO + SrO**)/**P2O5** being 0.81-0.86. Plates (thickness t mm) made of the glasses show absorbance attributed to the OH group (βOH) 0.5-4 mm-1, where βOH is defined as $-\ln(B/A)/t$ (A, B = IR transmission rate at 2.5 μm and 3.33 μm , resp.). Glass ceramics with good mech. strength, chemical durability, and appearance are manufactured by melting the above glasses, molding, then crystallization A

glass

ceramic comprising **P2O5** 66.9, **CaO** 16.6, **SrO** 10.4, **Al2O3** 3.5, **Ce2O3** 2.6, and **NiO** 0.1 weight% was soaked in 80° water for 4 wk to show bending strength 1200 kg/cm2.

ST dental calcium phosphate glass ceramic; **strontium** aluminum **cerium** glass ceramic dental

IT Phosphate glasses

RL: IMF (Industrial manufacture); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(calcium phosphate; calcium phosphate-based glass ceramics as dental materials)

IT Glass ceramics

Glass ceramics

(dental; calcium phosphate-based glass ceramics as dental materials)

IT Dental materials and appliances

Dental materials and appliances

(glass ceramics; calcium phosphate-based glass ceramics as dental materials)

IT 1305-78-8, **Calcium oxide**, biological studies

1307-96-6, **Cobalt oxide**, biological studies 1309-37-1,

Iron oxide, biological studies 1313-99-1,

Nickel oxide, biological studies 1314-11-0,

Strontium oxide, biological studies 1314-56-3,

Phosphorus oxide, biological studies 1344-28-1, **Aluminum**

oxide, biological studies 1345-13-7, **Diclerium trioxide**

11113-77-2, **Palladium oxide** 12036-10-1, **Ruthenium dioxide** 12036-35-0,

Dirhodium trioxide 13463-67-7, **Titanium oxide**

, biological studies

RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(calcium phosphate-based glass ceramics as dental materials)

IT 1305-78-8, **Calcium oxide**, biological studies

1309-37-1, **Iron oxide**, biological studies

1313-99-1, **Nickel oxide**, biological studies

1314-11-0, **Strontium oxide**, biological studies

1314-56-3, **Phosphorus oxide**, biological studies 1344-28-1

, **Aluminum oxide**, biological studies

13463-67-7, **Titanium oxide**, biological studies

RL: PEP (Physical, engineering or chemical process); THU (Therapeutic

use); BIOL (Biological study); PROC (Process); USES (Uses)
(calcium phosphate-based glass ceramics as dental materials)

RN 1305-78-8 HCAPLUS
CN Calcium oxide (CaO) (9CI) (CA INDEX NAME)

Ca=O

RN 1309-37-1 HCAPLUS
CN Iron oxide (Fe2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1313-99-1 HCAPLUS
CN Nickel oxide (NiO) (8CI, 9CI) (CA INDEX NAME)

Ni=O

RN 1314-11-0 HCAPLUS
CN Strontium oxide (SrO) (6CI, 8CI, 9CI) (CA INDEX NAME)

O=Sr

RN 1314-56-3 HCAPLUS
CN Phosphorus oxide (P2O5) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

L1 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:18536 HCAPLUS
DN 126:50157
ED Entered STN: 13 Jan 1997
TI UV- and IR-absorbing glass having green tint
IN Nagashima, Yukihiro; Sakaguchi, Koichi; Uchino, Takashi
PA Nippon Sheet Glass Co. Ltd., Japan
SO Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C03C004-08
ICS C03C003-095; C03C004-02
CC 57-1 (Ceramics)
Section cross-reference(s): 73
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|------------|------|----------|-----------------|--------------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | EP 745566 | A1 | 19961204 | EP 1996-108772 | 19960531 <-- |
| | EP 745566 | B1 | 19980819 | | |

R: DE, FR, GB

| | | | | |
|---------------------|----|----------|----------------|----------|
| JP 09048635 | A2 | 19970218 | JP 1996-88040 | 19960410 |
| US 6017836 | A | 20000125 | US 1996-657202 | 19960603 |
| PRAI JP 1995-136386 | | 19950602 | | |
| JP 1996-88040 | | 19960410 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|------------|-------|--|
| EP 745566 | ICM | C03C004-08 |
| | ICS | C03C003-095; C03C004-02 |
| AB | | The title glass contains SiO ₂ 65-80, Al ₂ O ₃ ≤5, MgO ≤10, CaO 5-15, Na ₂ O 10-18, K ₂ O ≤5, MgO + CaO 5-15, Na ₂ O + K ₂ O 10-20, and B ₂ O ₃ 0.2-5.0 weight%; and as coloring components, 0.5-1.0 weight% (as Fe ₂ O ₃) of total Fe oxide having a ratio of FeO based on the total iron oxide of 0.20-0.40, 0.2-2.0 weight% CeO ₂ , and 0-1.0 weight% TiO ₂ . |
| ST | | UV IR absorbing glass green tint |
| IT | | IR absorption |
| | | UV absorption |
| | | (UV- and IR-absorbing glass having green tint) |
| IT | | Silicate glasses |
| | | RL: TEM (Technical or engineered material use); USES (Uses) |
| | | (UV- and IR-absorbing glass having green tint) |
| IT | | 1306-38-3, Ceria, uses 1309-37-1, Iron oxide, uses 13463-67-7, Titania, uses |
| | | RL: MOA (Modifier or additive use); USES (Uses) |
| | | (coloring agent, glass composition containing; UV- and IR-absorbing glass having green tint) |
| IT | | 1303-86-2, Boron oxide, uses 1305-78-8, Calcia, uses 1309-48-4, Magnesia, uses 1313-59-3, Sodium oxide, uses 1344-28-1, Aluminum oxide (Al ₂ O ₃), uses 12136-45-7, Potassium oxide, uses |
| | | RL: MOA (Modifier or additive use); USES (Uses) |
| | | (glass composition containing; UV- and IR-absorbing glass having green tint) |
| IT | | 7631-86-9, Silica, properties |
| | | RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses) |
| | | (glass composition containing; UV- and IR-absorbing glass having green tint) |

L1 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1990:38093 HCAPLUS
 DN 112:38093
 ED Entered STN: 04 Feb 1990
 TI Far infrared-radiating fire-resistant polyester fibers
 IN Sato, Kikutomo; Takeuchi, Nobusuke
 PA Kuraray Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM D01F006-92

ICS D01F006-92

ICA B68G001-00

CC 40-9 (Textiles and Fibers)

FAN.CNT 1

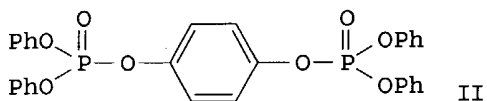
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------------|------|----------|-----------------|--------------|
| PI JP 01162823 | A2 | 19890627 | JP 1987-321024 | 19871217 <-- |
| PRAI JP 1987-321024 | | 19871217 | | |

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------|
| JP 01162823 | ICM | D01F006-92 |
| | ICS | D01F006-92 |

ICA B68G001-00

GI



AB Title fibers, useful for bedding and stuffing, comprise powdered oxide ceramics of particle size $\leq 5 \mu\text{m}$ showing total radiation integrated over the wavelength range $2-25 \mu\text{m} \geq 0.4$ at 500° and organic P compds. $\text{R1}[\text{OYOP}(\text{O})\text{R2}]_n$ [I; Y = phenylene, diphenylalkanediyl, di-Ph sulfonediyl; $\text{R1} = \text{H}, \text{PO}(\text{OR3})_2, \text{P}(\text{O})\text{HOR3}$; $\text{R2} = \text{Ph}, \text{OPh}, \text{alkylphenoxy}$; $\text{R3} = \text{Ph}, \text{alkylphenyl}, \text{alkoxyphenyl}$; $n = 1-20$]. Thus, poly(ethylene terephthalate) containing 10% 50:50 mixture of powdered ceramics

(5 μm maximum) and compound II was spun into fibers with fineness 6.27 denier, tenacity 3.43 g/denier, elongation 43.8%, ceramics content 4.95%, and P content 4.90%. The fibers, cut into 64-mm lengths for fillings, showed acceptable fire resistance and good warmth by a sensory test.

ST polyester fiber fire resistance; IR radiation far polyester fiber; ceramic oxide organophosphorus polyester fiber; bedding polyester fiber fire resistance

IT Polyester fibers, uses and miscellaneous

RL: USES (Uses)

(fire-resistant, far IR-radiating, containing powdered oxide ceramics and organic phosphorus compds., for bedding and stuffing)

IT Infrared radiation

(far-, from polyester fibers containing powdered oxide ceramics)

IT Ceramic materials and wares

(powdered, oxide, polyester fibers containing organic phosphorus compds.

and,

fire-resistant, far IR-radiating, for bedding and stuffings)

IT 51732-57-1

RL: USES (Uses)

(polyester fibers containing powdered oxide ceramics and, fire-resistant,

far

IR-radiating, for bedding and stuffing)

L1 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1987:560102 HCAPLUS

DN 107:160102

ED Entered STN: 31 Oct 1987

TI Ultraviolet ray-permeating infrared ray-absorbing heat-resistant glass

IN Fujiwara, Shigetoshi

PA Hoya Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C03C003-062

ICS C03C004-08

CC 57-1 (Ceramics)

Section cross-reference(s): 9

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|-------------|------|----------|-----------------|--------------|
| PI | JP 62065951 | A2 | 19870325 | JP 1985-163923 | 19850726 <-- |
| | JP 03001249 | B4 | 19910110 | | |

PRAI JP 1985-163923

19850726

CLASS

| PATENT NO. | CLASS | PATENT FAMILY CLASSIFICATION CODES |
|-------------|-------|------------------------------------|
| JP 62065951 | ICM | C03C003-062 |
| | ICS | C03C004-08 |

AB The heat-resistant glass used in blood-analyzing device contains 95wt.% based material of P2O5 35-70, SiO2 5-40, Al2O3 5-25, B2O3 0-20, R2O3 0-15, and RO 0-15 weight% (R2O3 = Ga2O3, Y2O3, La2O3, and/or Gd2O3; RO = divalent metal oxide). Besides the base material, the glass composition further contains 0-15 weight% NiO and/or 0-15 weight% CoO. Thus, after irradiation of

a heat-resistant glass having a 55P2O5-26SiO2-4B2O3-15Al2O3-5NiO-0.5CoO composition by a high-power Hg lamp, it showed 78-80% permeability at 300 nm as compared to 57-82% for a conventional one.

ST aluminophosphosilicate glass UV ray permeable; IR ray absorption heat resistant glass

IT Blood analysis

(heat-resistant aluminophosphosilicate glass for, containing nickel monoxide and cobalt monoxide, for shielding of IR rays)

IT Glass, oxide

RL: USES (Uses)

(aluminophosphosilicate, containing cobalt monoxide and/or nickel monoxide, UV-permeable, for shielding of IR ray in blood analyzing device)

IT 1307-96-6, Cobalt monoxide, uses and miscellaneous 1312-81-8, Lanthanum oxide 1313-99-1, Nickel monoxide, uses and miscellaneous 1314-36-9, Yttria, uses and miscellaneous 12024-21-4, Gallium oxide (Ga2O3) 12064-62-9

RL: USES (Uses)

(glass containing, aluminophosphosilicate, with improved IR absorptivity and heat resistance, for blood anal.)

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(FILE 'HOME' ENTERED AT 15:02:10 ON 26 AUG 2004)
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 15:02:22 ON 26 AUG 2004

| | |
|----|------------------------|
| L1 | 1 S WO99-KR138/AP, PRN |
| | E KIM Y/AU |
| L2 | 1004 S E3, E19 |
| | E KIM YOUNG/AU |
| L3 | 65 S E3 |
| | E KIM YOUNG K/AU |
| L4 | 99 S E3, E7, E8 |
| | E KIM YOUNGK/AU |
| L5 | 2 S E4 |
| L6 | 1 S L1 AND L2-L5 |
| | SEL RN |

FILE 'REGISTRY' ENTERED AT 15:31:12 ON 26 AUG 2004

| | |
|-----|---|
| L7 | 32 S E1-E32 |
| L8 | 2 S L7 AND (SILICA OR PHOSPHORUS PENTOXIDE)/CN |
| L9 | 12 S L7 AND (C OR CR OR BA OR SR OR CO OR CU OR LI OR NB OR ZR OR |
| L10 | 6 S L7 AND (ND OR YB OR CE OR SM OR LA OR Y)/MF |
| L11 | 12 S L7 NOT L8-L10 |
| | E FEO/MF |
| L12 | 14 S E3 |
| L13 | 1 S L12 AND IRON OXIDE/CN |
| L14 | 13 S L11, L13 |

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                SEL RN L8
L15      2228 S E1-E2/CRN
                SEL RN L14
L16      4580 S E3-E15/CRN
                SEL RN L10
L17      179811 S E16-E21/CRN
                SEL RN L9
L18      924212 S E22-E33/CRN
L19      0 S L15 AND L16 AND L17 AND L18
L20      0 S L15 AND L16 AND L17
L21      153 S L15 AND L16 AND L18
L22      71 S L16 AND L17 AND L18
L23      163 S L21,L22 AND (SI OR P)/ELS

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FILE 'HCAPLUS' ENTERED AT 15:40:52 ON 26 AUG 2004

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L24      37188 S (L8 OR SIO2 OR P2O5 OR SILICA OR SILICON DIOXIDE OR PHOSPHORU
L25      24613 S L24 AND (L9 OR C OR CR OR BA OR SR OR CO OR CU OR LI OR NB OR
L26      15260 S L25 AND (L14 OR TIO2 OR AL2O3 OR FE2O3 OR FEO OR MNO OR MGO O
L27      9788 S L25 AND (TITANIA OR TITANIUM DIOXIDE OR (TITANIUM OR ALUMINUM
L28      16184 S L26,L27
L29      1107 S L28 AND L8 AND L9 AND L10 AND L14
L30      1 S L1-L6 AND L29
                E IR/CT
                E E194+ALL
L31      5 S E7,E6+NT AND L29
                E E21+ALL
L32      4 S E9-E11,E8+NT AND L29
                E ELECTROMAGNETIC SHIELD/CT
                E E4+ALL
L33      1 S E3,E2+NT AND L29
                E WATER PURIFICATION/CT
                E E3+ALL
L34      8 S E4,E3+NT AND L29
L35      18 S E8+OLD,NT AND L29
L36      0 S E9+OLD,NT AND L29
L37      32 S E10+OLD,NT AND L29
                E WATER/CT
                E E3+ALL
                E WATERS/CT
                E E3+ALL
L38      32 S E2,E1+NT AND L29
                E OPTICAL MATERIAL/CT
                E E4+ALL
L39      101 S E2+NT AND L29
L40      213 S E117+OLD,NT,PFT,RT AND L29
L41      13 S E118+OLD,NT,PFT,RT AND L29
L42      17 S E119+OLD,NT,PFT,RT AND L29
L43      36 S E120+OLD,NT,PFT,RT AND L29
                E ANTIFUNG/CT
                E E5+ALL
                E E2+ALL
L44      4 S E9,E10,E8+NT AND L29
                E ANTIMICROB/CT
                E E6+ALL
L45      5 S E4 AND L29
L46      12 S E3+NT AND L29
L47      3 S E3+OLD,PFT,RT AND L29
L48      340 S L31-L47
L49      102 S OPTICAL?/SC,SX AND L48
L50      121 S L8 (L) DEV/RL AND L29
L51      100 S L9 (L) DEV/RL AND L50
L52      93 S L10 (L) DEV/RL AND L51
L53      91 S L14 (L) DEV/RL AND L52

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L54 50 S L53 AND L48
 L55 35 S L49 AND L54
 L56 177 S L48 AND (PY<=1998 OR PRY<=1998 OR AY<=1998)
 L57 55 S L56 AND L49
 L58 13 S L56 AND WATER?/SC,SX
 L59 24 S L56 AND RADI?/SC,SX
 L60 54 S L56 AND CERAMIC?/SC,SX
 L61 9 S L56 AND (PHARMACEUT? OR PHARMACOL?)/SC,SX
 L62 119 S L57-L61
 L63 23 S L62 AND L54
 L64 4 S L29 AND FAR IR
 L65 4 S L29 AND FAR INFRARED
 L66 4 S L64,L65
 E IR RADIATION/CT
 L67 906 S E4
 L68 405 S E5
 E E3+ALL
 L69 15702 S E9-E11,E8+NT
 L70 4 S L29 AND L67-L69
 L71 6 S L66,L70
 L72 6 S L71 AND L1-L6,L24-L71
 E DEODOR/CT
 L73 7 S L29 AND (E9+OLD,NT,PFT,RT OR E18+OLD,NT,PFT,RT OR E24+OLD,NT,
 E E24+ALL
 L74 0 S L29 AND E3
 L75 10 S L29 AND E3+OLD,NT,PFT,RT
 L76 15 S L73,L75
 L77 14 S L76 NOT L72
 L78 7 S L77 AND (PY<=1998 OR PRY<=1998 OR AY<=1998)
 SEL DN AN 4 5 6
 L79 4 S L78 NOT E1-E9
 L80 10 S L72,L79 AND L1-L6,L24-L79
 L81 7 S L77 NOT L78,L80
 SEL DN AN 4 5
 L82 2 S L81 AND E10-E15
 L83 12 S L80,L82
 L84 94155 S L8 AND L14
 L85 16041 S L84 AND L9,L10
 L86 10309 S L85 AND (PY<=1998 OR PRY<=1998 OR AY<=1998)
 L87 903 S L86 AND L8 (L) DEV/RL
 L88 881 S L87 AND L14 (L) DEV/RL
 L89 791 S L88 AND (L9 OR L10) (L) DEV/RL
 L90 30 S L86 AND L67-L69
 L91 31 S L86 AND FAR() (IR OR INFRARED)
 L92 48 S L90,L91
 L93 6 S L89 AND L92
 L94 17 S L83,L93
 L95 42 S L92 NOT L94
 L96 16 S L95 AND OPTICAL?/SC,SX
 L97 25 S L95 AND (WATER? OR RADI? OR PHARMACOL? OR PHARMACEU? OR CERAM
 L98 35 S L96,L97
 L99 7 S L95 NOT L98
 L100 34 S L98,L99 AND ?RADIAT?
 L101 44 S L94-L100 AND ?RADIAT?
 L102 15 S L94-L100 NOT L101
 SEL DN AN 2 6 8 9 10
 L103 5 S L102 AND E16-E30
 L104 49 S L101,L103 AND L1-L6,L24-L103

FILE 'HCAPLUS' ENTERED AT 16:36:59 ON 26 AUG 2004

L105 4 S (JP09301734 OR JP62065951 OR JP01162823 OR EP0745566)/PN
 L106 4 S L105 AND L1-L6,L24-L104